FAST COMPANY

INNOVATION BY DESIGN 2015

Google's Triple Play

Amazon's Answer to Siri

How Slack Is Destroying Email

+

Airbnb
Nike
Facebook
Dyson
L'Oréal
and more

A $50 billion valuation.

A legion of enemies.

How CEO Travis Kalanick plans to keep the magic going.

Admit It. You Love Uber.



THE HUSTLER: "You just have to go for it" says Kalanick, "just for the sheer adventure."


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Fast Company celebrates the best in problem-solving design worldwide, featuring Slack, Airbnb, Nike, Google, Facebook, and more.
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By Robert Safian

Best of the best

108 Meet the 165 finalists from our Innovation by Design Awards.



On the cover: Photograph by ioulex

This page: Photograph by Mads Perch

Graphics: Roberto Rosolin; styling: Tzarkusi; grooming: Victoria Bond at Caren Agency

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By Matthew Shaer



Steering committee

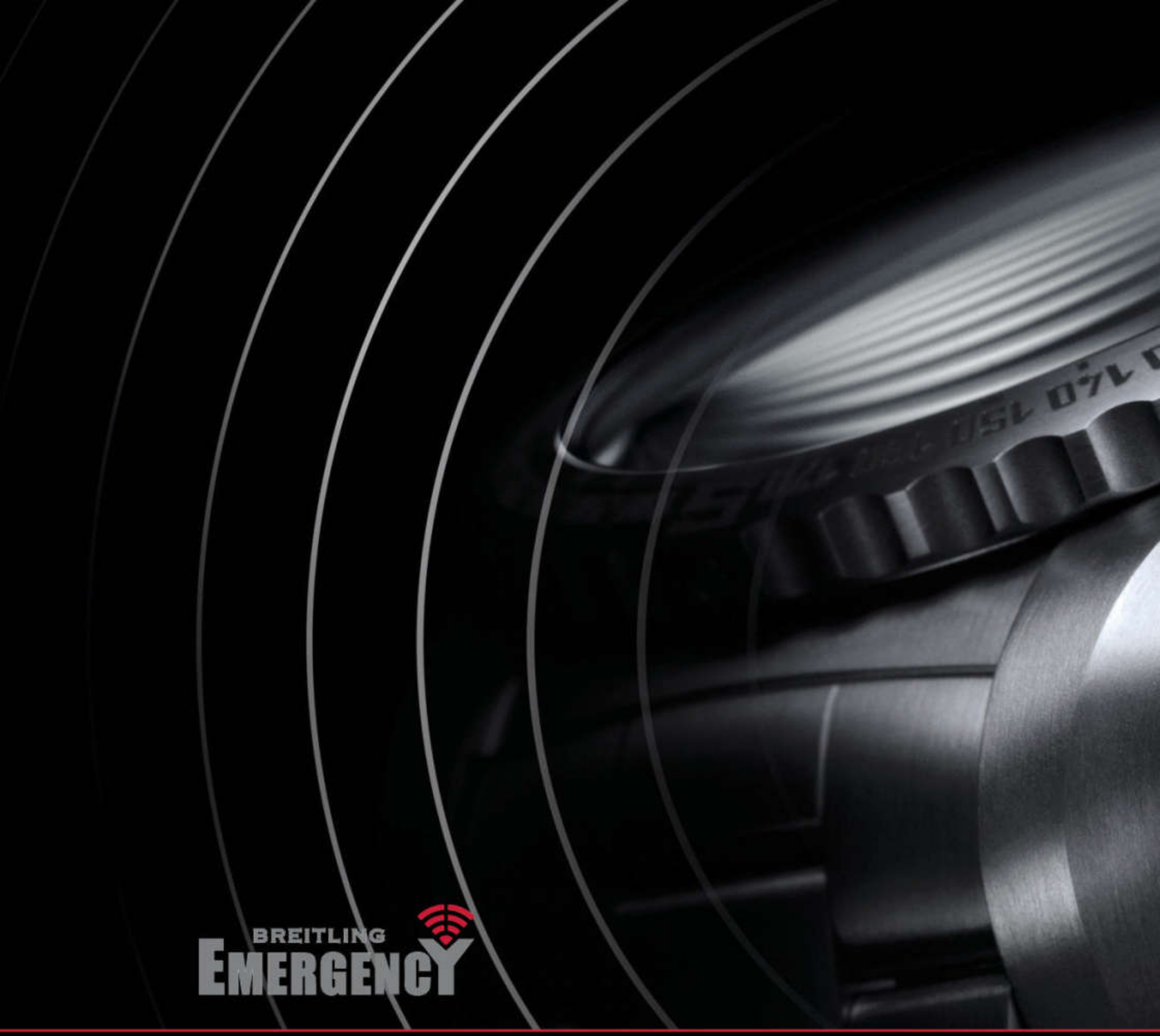
Musician Paige Lewis is one of a slew of—surprise!—happy Uber drivers. (page 110)

Grooming: Amy Lawson at Artist Untied (this page and cover)

Photograph by ioulex



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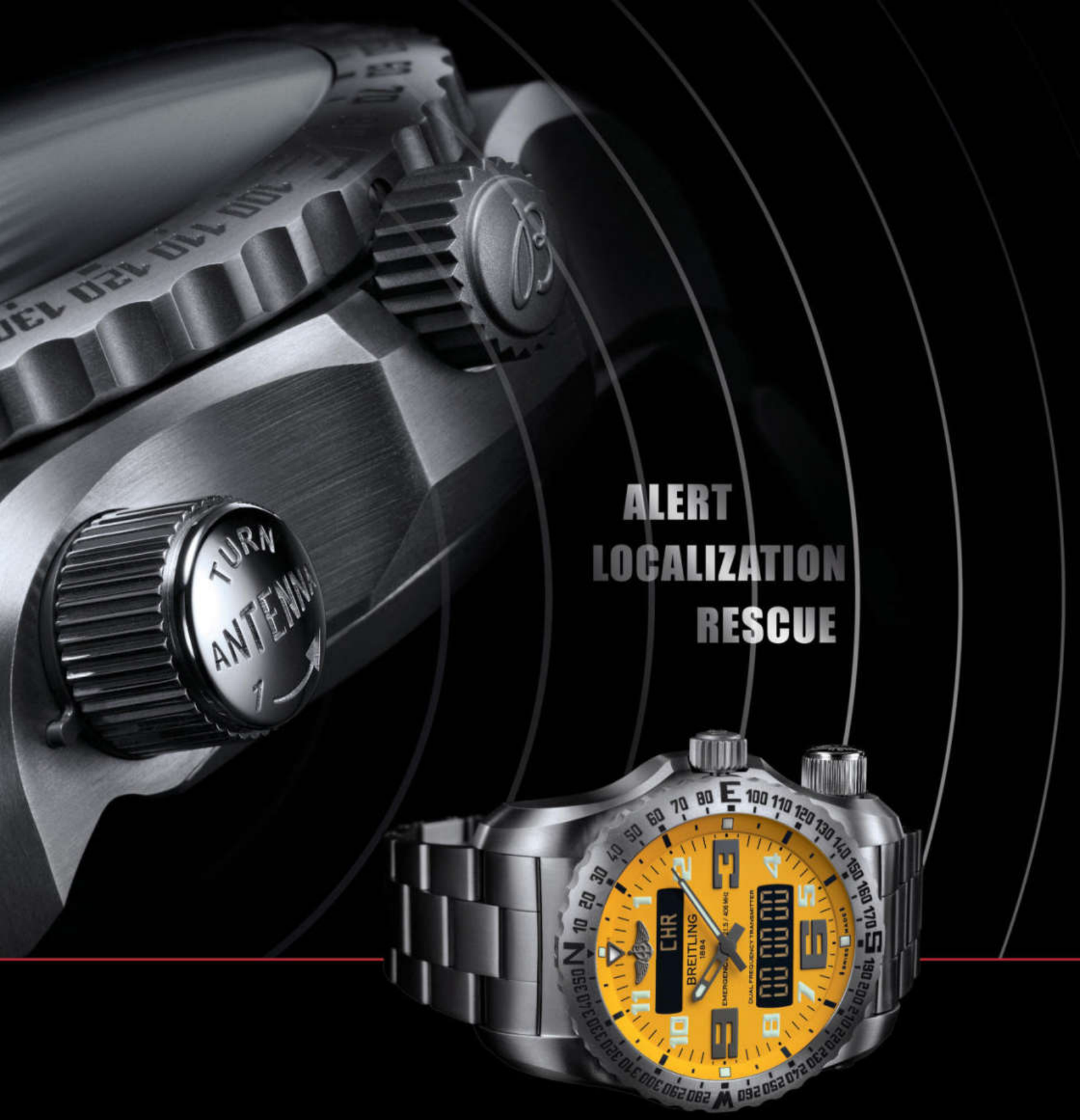


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Inside Lee Daniels's *Empire*
"Everything I do has to come from my experience or those of people I know," the actor, director, and producer says. (page 36)

DEPARTMENTS

Most Creative People
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One More Thing
148 What rules do companies like Google and Reddit have to play by when it comes to freedom of information?
By Baratunde Thurston

Grooming: David Cox at Art Department

Photograph by Zach Gross



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2016 GLC 300 shown in Iridium Silver metallic paint with optional equipment. Vehicle available fall 2015. *MSRP excludes all options, taxes, title, registration, transportation charge and dealer prep. Options, model availability and actual dealer price may vary. See dealer for details. ©2015 Mercedes-Benz USA, LLC

For more information, call 1-800-FOR-MERCEDES, or visit MBUSA.com.



L'Oréal gets a makeover
Scientist Balanda Atis has created more than 30 new shades for women of color. (page 54)

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Photograph by Benedict Evans



Reinvented from the outside in.

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Ahead of the game
Nintendo's Virtual Boy tackled virtual reality nearly 20 years before Oculus Rift.

FASTCOMPANY.COM

Tech's untold stories

FC Looking back at the history of technology isn't just an exercise in nostalgia; it's a reminder of just how forward-looking the companies of decades past have been. Vector Graphic, for example, a computer maker founded by two stay-at-home wives in the 1970s, jump-started the PC revolution years before IBM got into the business. Etak, a Silicon Valley startup bankrolled by a cofounder of Atari, designed a car navigation system in 1985, no GPS satellites required. The pioneers behind innovations such as these talk to tech historian Benj Edwards, who tells their tales at FastCompany.com. The products may have become relics, but their stories offer enduring lessons about how to meet the challenges of tomorrow.

The Fast Company Innovation Festival November 9–13

This fall, *Fast Company* will host its first-ever Innovation Festival, bringing together luminaries for a week of conversation and inspiration in New York. Can't make it in person? Check in online for exclusive coverage and behind-the-scenes access. See innovationfestival.fastcompany.com for all the details.



Clockwise from top left: Goop founder Gwyneth Paltrow; DJ and producer Steve Aoki; tennis legend Serena Williams; architect Bjarke Ingels; musician, writer, and actress Carrie Brownstein; Nike CEO Mark Parker

FASTCOEXIST.COM

We hold this truth to be self-evident: Inequality exists

Income inequality is a major issue in this country. Co.Exist's Inequality Week examines the problem from all sides: how things got this bad, who's most hurt by it, and what we can do to fix it.

FASTCODESIGN.COM

Focus with the press of a button

Let Co.Design introduce you to Saent, an elegant-looking Bluetooth-connected button by a former Lenovo lead designer that mutes apps like Twitter so you can concentrate.

FASTCOCREATE.COM

Unleash your creativity

The best piece of advice comedy legend Norman Lear ever received came from his psychiatrist, who taught him to beat writer's block by thinking of his ideas as though they were caught in a burning building: "Get them out of the door!" Hear Lear tell the story himself as part of Co.Create's "Creation Stories" series.

FASTCO STUDIOS

Cloudy with a chance of wisdom

Meatball Shop founders Daniel Holzman and Michael Chernow have a great problem: How do you balance rapid growth (from one location in 2010 to six today) with a personal touch? *Fast Company*'s new video series follows them as they seek guidance from restaurateur Danny Meyer, SoulCycle cofounder Elizabeth Cutler, and more.

Marty Katz/The LIFE Images Collection/Getty Images (Virtual Boy); Sonia Moskowitz/Getty Images (Paltrow); Robin Marchant/Getty Images (Aoki); Karwai Tang/WireImage/Getty Images (Williams); Jason Kempin/Getty Images for Nike (Parker); Autumn de Wilde (Brownstein); Stephen Voss (Ingels)



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20 lessons of design

Once upon a time, design was considered unimportant among most top business leaders, a secondary realm prowled by precious egotists and aesthetes. At best, design was an afterthought, like slapping a coat of paint on an already-built house or adding a cool tail fin to a finished product.

No more. CEOs and strategists alike now appreciate the fundamental advantages that sophisticated design can provide. *Fast Company*'s fourth annual Innovation by Design awards competition drew more than 1,500 submissions from across the economy and around the globe, and the finalists—whose achievements inform the content of this month's magazine—reflect the most exciting new directions in business today. Here, in recognition of *Fast Company*'s 20th anniversary year, are 20 lessons of design drawn from this issue.



Funny bone
Slack CEO Stewart Butterfield designed his workplace communication platform to have a personality—his.

1. DESIGN IS INNOVATION; INNOVATION IS DESIGN.

In a world of flux, where an authentic connection with the consumer is more vital than ever, businesses need to identify a worthy mission and address it in an intuitive, human way. Special things happen when they do, whether that's at Apple or Uber (page 110), or even an enterprise-software outfit like Slack (page 80).

2. DESIGN INSPIRES.

When a service is adeptly tuned to meet a need, it can spread like wildfire. Uber became a worldwide phenomenon through the word-of-mouth that its product generated. And that impact can extend beyond customers to other businesses. By designing a complete end-to-end experience, Uber has inspired a new kind of one-tap economy across the globe.

3. EMOTION IS AS IMPORTANT AS UTILITY.

This runs counter to traditional business analysis. But consumers need to *feel* the benefit of a product or service, even as they intellectually value what it does for them. All design-driven enterprises obsess about this, from Apple to Warby Parker. Airbnb, with its well-designed app and deftly conceived TV campaign, has blossomed by consistently tapping into the emotional impact it provides both guests and hosts (page 82).

4. GOOD DESIGN OVERCOMES DISCOMFORT.

Carpooling feels déclassé, but the ease of the new UberPool service has trumped that societal prejudice, just as Airbnb has upended assumptions about the appeal of sleeping in someone else's bed. Virtual reality may seem like an experience from the future, but Google Cardboard (page 84) has used clever design to create a low-cost experience for all.

5. SIMPLE DESIGN ISN'T SIMPLE.

As senior writer Austin Carr explains on page 31, Amazon's foray into voice-activated interface has made waves precisely because it doesn't try to do too much—something CEO Jeff Bezos is relentlessly pressing.

6. THE FIRST MOVER DOESN'T ALWAYS HAVE AN ADVANTAGE.

All things being equal, it's best to be first to market. But all things are not equal. And in the trade-off between timing and execution, getting it right matters more. That's why Facebook outlasted MySpace, and why Uber is trouncing other ride-share services. Sir James Dyson's company (page 126) has grown to $2.1 billion in annual sales by making it a priority to "get it exactly right," as one of his engineers puts it.

Photograph by Clayton Cotterell

Styling: Lacey-June Berry; grooming: Sonia Leal-Serafim. Sweater: Ralph Lauren; shirt: J.Lindeberg. Celine Grouard (Safian)


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7. ONE INSIGHT CAN UNLOCK THE NEXT ONE.

Dyson set out to build a better vacuum, and in the process used what it learned to expand into fans, hand dryers, and more. Now it is poised to become a full-fledged technology company, taking those lessons one step further. Uber is a global enterprise that operates locally, with each market A/B testing ideas that others can then adopt.

8. DESIGN NEEDS PROTECTION.

Unlocking insights doesn't happen in a straight line. Innovation is too messy for that, which is why design breakthroughs only come when there is room to explore. This is one reason Sir James has no intention of taking Dyson public; he doesn't trust shareholders to embrace a long-term mission—which, paradoxically, is what allows the enterprise to generate value.

9. THE MUNDANE CAN BE LIBERATING.

Where others see only dull gray, designers see opportunity. Who gets excited about the future of email? Stewart Butterfield did, and now Slack is valued at $2.8 billion. What about…socks? Breathing life into this overlooked area has helped Stance build a booming brand (page 46).

10. FRUSTRATION CAN BREED INSPIRATION.

Butterfield launched Slack after he'd been annoyed by his experiences with corporate software at Yahoo. The head of Leatherman tools was denied entry to Disneyland because he was carrying his own product—so he came up with a wearable version that has even broader applications (page 100).

11. TEAMWORK FEEDS ON ITSELF.

An ad agency, a not-for-profit, and a scientist joined forces to create a drinkable book that can save lives (page 94). At Nike, a collaborative, design-friendly culture continually bears fruit, from new shoes like the Flyease to new experiences like the Zoom City basketball court (page 104).

12. DESIGN IS HEALTHY.

Medical care is not always intuitive, but devices like the Cue Tracker (page 88) can help all of us—and our doctors—pay attention to the things that matter most.

13. DESIGN HAS A CONSCIENCE.

A 21-year-old has launched a wild bid to clean up ocean trash (page 98), and two designers inside Facebook—half a world apart—have helped provide safety and services to those in need (page 90).

14. DESIGN IS EFFICIENT.

When a terminal for budget airlines was built at Tokyo's Narita airport, the funds weren't there for all the usual amenities. Those constraints led to a "two into one" approach that delivered utility at a fraction of the cost (page 102).

15. DESIGN CAN BE BIG AND SMALL.

From a new Ebola-protection suit to Virgin Hotels' new bed (page 98), design can have impact at every scale.

16. DATA CAN BE IGNORED...

When Dyson did market research around its first vacuum, consumers supposedly hated the clear plastic bins that allowed them to see the dirt inside. The engineers, though, loved it—and that signature element has helped define Dyson products ever since.

17. ...AND DATA CAN BE UPLIFTING.

IBM has used data visualization to create music from tennis matches (page 96), while Emotient promises a new way to understand the hidden emotions of groups (page 86).

18. DESIGN IS FULL OF SURPRISES.

Uber didn't start out trying to redesign cities, but its success has given it the ability to think bigger about how a marketplace of shared (and even driverless) cars can alter our urban experience.

19. DESIGN ISN'T GOING AWAY.

The more than 1,500 entrants to our design awards this year represent the broadest pool ever.

20. WE ARE ALL DESIGNERS.

New tools like Squarespace 7 (page 88) allow any of us to build our own creations in both the virtual world and the tangible one. Where we go from here is up to us.



Power source
Dyson, a company founded on transparency—and some very cool motors—believes design and technology are tightly linked.

Robert Safian
editor@fastcompany.com

Photograph by Kate Peters



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An Honest woman



JESSICA ALBA

COFOUNDER AND CHIEF CREATIVE OFFICER, THE HONEST COMPANY

First Jessica Alba wanted to protect your baby from harmful chemicals. Then she wanted to safeguard your home. Now the cofounder of eco-friendly brand the Honest Company is aiming to save your face. With Honest Beauty—set to launch this month—Alba is expanding into makeup, a category she thinks could use help. "People watch their diet, they buy organic cotton clothes," she says. "But when it comes to their beauty routine, it's completely compromised, from the neck up."

It's only been three years since Alba and partner Christopher Gavigan launched Honest (Alba was one of *Fast Company*'s Most Creative People in 2012). But their business has been a quick success: Revenue is projected to hit $250 million this year (up from $150 million in 2014), and Honest is valued at $1 billion. With the makeup line, the company is poised to grow even faster. "Beauty has been a passion project of mine," says the actress. "With years of experience in the makeup chair, I've seen how you can transform yourself and your mood. But I felt like there wasn't [makeup] that is going to work but also be safe."

To create the new line, Honest hired a team of in-house chemists, who avoided more than 1,400 chemicals. They haven't been able to make everything work (nail polish remains problematic), but the company is just getting started. "We're going to make mistakes," says Alba. "You have to pivot quickly and really listen to consumers. We have such a vocal community, and they were yelling at us for three years to launch beauty. They really are excited and hungry for this type of product." *—KC Ifeanyi*

BEST DEVELOPMENT SINCE 2012 "The transition to image-based communication. I love that apps have made creativity and storytelling so much more accessible. It's given me a ton of inspiration and helped me connect with so many people." **ADVICE SHE WOULD GIVE HERSELF IF SHE COULD GO BACK TO 2012** "Take the time to do things right and don't get caught up in being the first to market—just be the best at what you do. Hopefully I'll listen to myself!" **WHAT'S NEXT** An Honest Beauty pop-up store in L.A. "We really want to learn from that experience," she says. "Women want to see and smell the products. Hopefully we'll be able to roll out brick-and-mortar branded stores from our learnings."

HOW SHE STAYS PRODUCTIVE

"Exercise is actually a great productivity tool for me. Productivity is more than just tackling the work that's in front of you. It's ensuring that you're fueled and inspired to get things done the best they possibly can be."

Photograph by Adam Amengual

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Inspire the Next

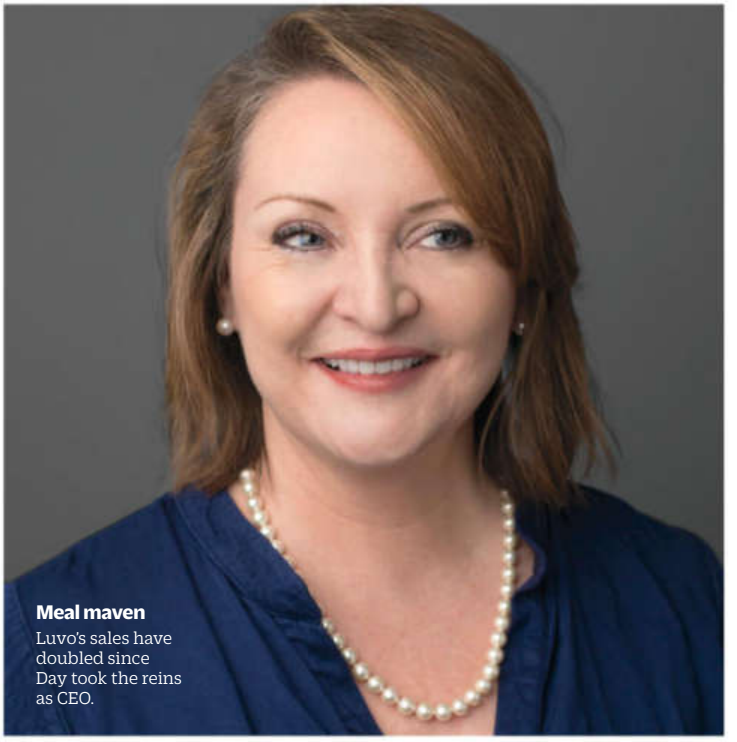
"WHAT IF CARS COULD TAKE ME TO THE FUTURE?"

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Meal maven
Luvo's sales have doubled since Day took the reins as CEO.

Bringing the heat to frozen foods

LUVO

When Luvo debuted on our Most Innovative Companies list in 2014, the startup had just recruited ex-Lululemon CEO Christine Day to lead its efforts to bring healthful, low-calorie meals to the arctic aisle. (Each of Luvo's organic offerings is made with less than 2 teaspoons of sugar and less than 500 mg of sodium.) Luvo, now sold in more than 5,000 store locations, managed to double its sales within the past year—in part by attracting consumers to its mission. This past summer, Day recruited Seattle Seahawks quarterback and Super Bowl champion Russell Wilson as a brand ambassador and investor. (He joins Olympic medalist Natalie Coughlin and longtime backer Derek Jeter, who also serves as brand development officer.) As part of the deal—based on a similar model Day created at Lululemon—Luvo will provide meals and nutrition education for Wilson's Passing Academy youth football camp. "Our ambassadors are walking away from other big food endorsements and saying, 'We want to make a difference,'" says Day.

Milestones Since Luvo began selling its meals on Delta flights in 2013, the airline has been widely praised as one of the top domestic carriers for healthy food.

Challenges The frozen-food industry has been declining as people seek fresher fare. Luvo must keep convincing customers that it's more Whole Foods–on-ice than Hungry-Man dinners.

Buzz ↑

> "Customers have become more educated. They're reading food labels and rejecting preservative-laden food."
>
> **Christine Day**
> CEO, Luvo

COURSERA

Milestones The company recently partnered with the University of Illinois at Urbana-Champaign to offer free MBA courses.

Challenges Though anyone can take the classes, only students who are enrolled in the university's full iMBA program (tuition: $20,000) can get a degree.

Buzz ↑

NINTENDO



Milestones The Japanese gaming company surprised investors with its best first quarter since 2012, netting $9.3 million in profits. Sales were driven by the new Wii U game *Splatoon*.

Challenges Nintendo president Satoru Iwata passed away unexpectedly in July, just as the company was solidifying its turnaround (which includes a foray into mobile gaming).

Buzz ↔

ARUP

Milestones In May, the eco-friendly engineering firm installed a test unit of its "air-bubble shield" in smog-ridden Beijing. (The device resembles a bus stop and filters up to 70% of pollutants.) The pilot could expand to more public spaces.

Challenges The company's plans to erect a new 500-acre Apple data center in Ireland have been met with opposition from locals concerned about its impact on area wildlife.

Buzz ↔

BITTORRENT

> "Shoot allows you to send photos and videos directly between mobile devices, no matter what device you use or what network you're on."
>
> **Erik Pounds**
> VP of product management at BitTorrent, via the company blog

Milestones In its continued evolution into a legitimate file-sharing tool, BitTorrent has launched several apps based on Sync, its cloud-storage system, including Shoot, which allows mobile users to send media via QR codes. The company has also courted Hollywood, using its Bundle service to release two movies, David Cross's *Hits* and *Spring* by Drafthouse Films.

Challenges In April, BitTorrent laid off more than a quarter of its domestic workforce to focus on Sync.

Buzz ↓

PANERA BREAD



Milestones Panera has joined the "clean eating" movement proselytized by companies like Chipotle: In May, the chain announced that it would remove at least 150 artificial preservatives, flavors, colors, and sweeteners from its menu by the end of 2016.

Challenges The move could strain relations with big-brand suppliers like PepsiCo as Panera tries to wean patrons off soda.

Buzz ↑



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72ANDSUNNY

Milestones The L.A.–based advertising agency recently worked with Google to install a series of portraits of notable disability activists outside prominent Washington, D.C., buildings to celebrate the 25th anniversary of the Americans with Disabilities Act.

Challenges Brooklyn artist Maya Hayuk is suing the ad agency and Starbucks, its client, for copyright infringement after the coffee company launched a campaign that featured art with a resemblance to her work.

Buzz

VESTAS



"We are in a strong position in an otherwise competitive industry."
Anders Ronevad
CEO, Vestas

Milestones With contracts pouring in from more than 70 countries across six continents, Danish turbine producer Vestas Wind Systems announced that its Q2 orders reached 2,467 megawatts (up from 1,750 in Q1), helping the company capture 37% of the market and eclipse competitors like GE and Siemens.

Challenges After a protracted period of layoffs, including the exit of former CEO Ditlev Engel, Vestas has taken significant cost-cutting measures in an effort to bring down the price of its turbines.

Buzz

FLIPBOARD

"I think that ever since we started the company, there has always been acquisition interest."
Mike McCue
CEO, Flipboard, at the Mobile Beat 2015 conference

Milestones After releasing a web app in February, the news-aggregation service announced a 75% surge in readership. Capitalizing on that success, the company raised $50 million from JPMorgan Chase in a series D round.

Challenges Apple's recent announcement of a revamped version of its Newsstand app, now shortened to News, may further fuel calls for Flipboard to consider acquisition by a larger company.

Buzz

MODCLOTH

Milestones In July, the 13-year-old San Francisco–based online clothier released its first in-house label (below). Modcloth also opened a pop-up shop in its hometown, a possible sign of more brick-and-mortar stores in the future.

Challenges Following a drop in U.S. retail sales, the company weathered two rounds of layoffs in 2014.

Buzz





Dynamic duo
Stripe cofounders Patrick (left) and John Collison are growing their partner network.

A global push for online payments

STRIPE

In July, payment-processing startup Stripe announced it had signed both Visa and American Express as investors and allies in its mission to perfect the handling of online payments around the world.

"In order for us to stay at the forefront, it's important to have partnerships and relationships with the card networks, to have direct access to the financial infrastructure that they provide," says Stripe COO Billy Alvarado, who's been with the startup since 2011.

"Part of the promise of the Internet is that your physical location should be largely irrelevant."
Patrick Collison
CEO, Stripe

The deal will enable Stripe—which, as of August, operated in 21 countries across four continents—to leverage its partners' global networks to bring its software to more businesses. In return, it has helped American Express develop a BUY button of its own, which allows customers to quickly make secure purchases across the web. A similar program may be in the works with Visa.

"The Internet is incredibly powerful in terms of being able to create a level playing field for people across the globe," says Alvarado. "For us to be able to build that infrastructure is a very exciting proposition."

Milestones The company's valuation reached $5 billion over the summer, thanks to investments from Visa, American Express, and Silicon Valley stalwarts Kleiner Perkins and Sequoia Capital.

Challenges The startup faces stiff competition from PayPal-owned Braintree, which handled $22.8 billion in payments in 2014.

Buzz

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The Recommender



"**The Dash** is a Bluetooth wireless stereo headset that includes health sensors, an accelerometer, and a developer platform. The earbuds are waterproof, so you can enjoy your music even while swimming."

Avery Wang
Founder and chief scientist, Shazam



"**Sourced Adventures** offers day trips out of New York City, like white-water rafting, paintballing, and even skiing."

Ruzwana Bashir
Cofounder and CEO, Peek.com; *Fast Company* MCP



"**Hollyhock House**, Frank Lloyd Wright's first L.A. home, is finally open again after a long restoration. Well worth the trip."

Alexandra Patsavas
Founder, Chop Shop Music; *Fast Company* MCP



"I love to cook. For recipes, I'm using Yummly a lot. To get the food, I'm using Instacart. And to fight the weight that I put on when I cook too much: the fitness app Lark."

Sallie Krawcheck
Owner, Ellevate; *Fast Company* MCP

TECH TOOLS TO SIMPLIFY YOUR LIFE

1

TO CHARGE

"My phone is an extension of my office, so I always keep my **RAV Power Solar Charger** in my bag. It lets me power up using just sunlight."

Martha Poulter
EVP and CIO, Starwood Hotels

2

TO LOCATE

"You can attach **Tile** to anything and it pings its location based on other cell phones in the area. It saves time finding things that constantly go missing."

Nancy Daum
COO and CFO, Pereira & O'Dell



3

TO REWARD

"My kids were always losing money or asking me to buy things on their behalf. **IAllowance** is a great app that solves for these and more."

Courtney Holt
Chief strategy officer, Maker Studios

Illustrations by Ben Tallon; João Canziani (Krawcheck); Joshua White Photography (Hollyhock)


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"SKAM records, one of the most influential electronic music labels, has launched a new 10-inch-only sublabel named KASM. Both of its initial releases are essentials."

Kiya Babzani
Founder, Self Edge



"**Public School** is a Southwestern gastropub chain where they finally figured out that cheddar should be built into tater tots."

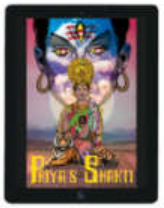
Cenk Uygur
Founder and CEO, Young Turks



"**The Japanese Konjac Sponge**, made of vegetable fiber, is pillow-soft and makes everyday cleaning and exfoliating a joy. This is a travel must-have."

Anyi Lu
Founder and CEO, Anyi Lu

BOOKS THAT WILL MELT YOUR MIND



Priya's Shakti

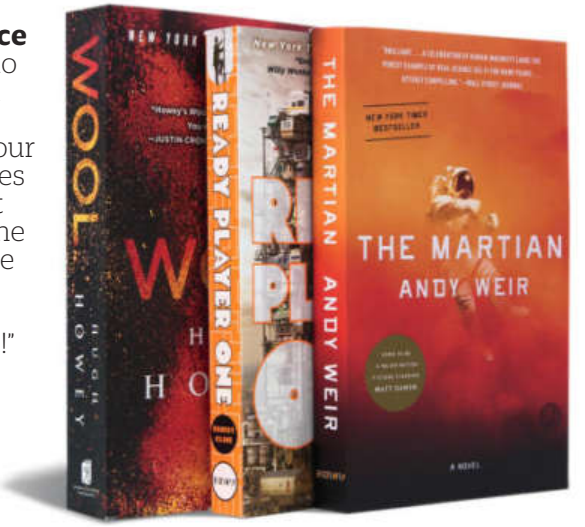
BY RAM DEVINENI, VIKAS K. MENON, AND DAN GOLDMAN

"The mythologically themed comic books use augmented reality to make a difficult subject—India's gender-based sexual violence—approachable."

Opeyemi Olukemi
Senior director of interactive programs, Tribeca Film Institute

"I binge-read **science fiction**. Not only do I enjoy it, but I find that great science fiction can open your mind to possibilities better than almost anything else. In the past two weeks, I've read *Ready Player One*, *The Martian*, and *Wool*, all great!"

Salman Khan
Founder and executive director, Khan Academy; *Fast Company* MCP





"I use the Ovopur water-filtration system by Aquaovo at home and love their **LAB[O]** glass water bottles. The silicone covers and caps come in several different colors."

Piraye Beim
Founder and CEO, Celmatix

Illustration by Ben Tallon; Self Edge (Babzani); Michelle Pattee (Lu)

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Welcome home, Alexa

In the race to win the connected-home market, Amazon's voice is starting to ring louder.

BY AUSTIN CARR
Illustration by Kyle Bean



NEXT

"How do we get an intelligent personal assistant into the home of every Amazon customer?" That simple query, according to sources involved, set the mission for Amazon CEO Jeff Bezos and the team he tasked with creating the e-commerce giant's latest entry into the hardware market: the Amazon Echo, a $179 cylindrical speaker roughly as tall and sturdy as a bottle of Merlot cut off at the neck. Sure, the Echo, which officially launched this past June, is good at playing music, delivering excellent bass and clear treble. But the key is what's inside: Alexa, an

always-listening Siri for your living room. It's Amazon's vision of the platform of the future, one that gives you the ability to control your home by voice.

Say the word *Alexa,* and the device's top glows blue, awaiting your command. Like Siri, she can respond to a laundry list of queries and requests—*Alexa, how tall is Mount Everest? Alexa, could you set an alarm for tomorrow morning?* But whereas Apple designed Siri primarily for mobile consumption through iPhones and iPads—push a button and talk—Alexa is invisible and ever-present, a natural interface for the connected home.

For decades, we've heard and seen visions of what the smart home of tomorrow could bring, from HAL 9000 and *The Jetsons* to *Minority Report* and *Her*. But this promise has leaped toward reality in recent years, thanks to improved technology and economic manufacturing, growing venture-capital (and crowdfunded) investments, and a network of so-called Internet of Things devices. Just as they did on PCs and mobile devices before, tech giants are racing to build the next big platform, this time for the connected home, a market poised to grow to $58 billion in the next half-decade.

The logical next step is to allow people to shop without having to touch a thing—making the Prime experience even more compelling.

The domestic arena has tempted tech giants at least as far back as Microsoft's release of the Xbox console in 2001. But now, rather than only battle to build the connected-TV box that could be a digital hub for the home, these companies have shifted their focus from hardware to voice interfaces, which may be the trick to getting their ecosystems widespread adoption. Apple's HomeKit platform will enable Siri to control devices such as the window shades and coffeemaker. Google has integrated voice commands into Nest, the smart-home company it spent $3.2 billion to acquire. Microsoft is making its personal assistant, Cortana, a key feature for the Xbox One.

What makes Alexa stand out in this crowded market is that Amazon is already an essential home-management tool for a whole lot of people, especially the estimated 40 million who have signed up for Prime membership. Run out of paper towels, need to replace your smoke detector, or just want to cue up the latest episode of *Orphan Black*? With its e-commerce reach and growing video ambitions, Amazon is there for you. The logical next step is to allow people to shop without having to touch a thing—making the Prime experience even more compelling.

As the Echo took shape years ago at Amazon's secretive Lab126, best known for developing the Kindle e-reader, the responsible teams were bullish about the myriad use cases for an ever-listening virtual assistant inside the home: If you're in the kitchen with hands covered in barbecue sauce, why not have Alexa set a timer for your ribs rather than fiddle with your iPhone? What if she could read you the news as you took your morning shower? Or order an Uber when you're hurrying to catch your flight? The applications were seemingly limitless.

But the company was wary of spending resources to solve problems that didn't exist—or creating new ones. Bezos was personally involved in keeping Alexa's voice cues simple, to avoid subjecting users to unnecessary and frustrating interactions, such as asking Alexa to turn off a light only to hear, "Which

ASK HER ANYTHING

HOW AMAZON'S ALEXA CAN HELP AT HOME

01 Cooking



Use Alexa to set a timer, add items to your phone's grocery list, or offer meal tips through Orange Chef's cooking-assistant app.

02 Media and Entertainment



Alexa syncs with iHeartRadio, Pandora, and Amazon Prime's media library; streams audiobooks through Audible.com; and can queue up news from NPR.

03 Personal Assistance



Amazon's voice service will do everything from checking your Google Calendar for appointments to defining or spelling a word.

04 Shopping



Further streamlining Amazon's vaunted one-click ordering, Alexa allows Prime users to reorder goods simply by asking.

05 Home Tech



Alexa is able to control Philips Hue lights and turn on and off appliances plugged into Belkin's connected outlets. She also works with Garageio's Wi-Fi–connected garage-door openers and Scout Alarm's home-security systems.

Illustrations by ROCK3RS





Stuck in traffic. *Ideas still moving forward.*





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A CURE FOR THE HICCUPS

WHAT ALEXA NEEDS TO BECOME MAINSTREAM

AN AGNOSTIC ECOSYSTEM

Perhaps Amazon's biggest hurdle: Alexa will have to embrace—and be embraced by—some of the company's main rivals. If products such as Apple TV and Google's Nest thermostat gain more widespread traction with consumers, **AMAZON WILL HAVE TO FIND A WAY TO GET THEM TO INTEGRATE WITH ALEXA.**

DIY SIMPLICITY

Installing connected-home devices can be a costly headache, involving syncing various services over Bluetooth, Wi-Fi, different accounts, and apps. Until these products are easier to use and connect or arrive in **PREPACKAGED HOME KITS WITH INSTALLATION INCLUDED,** this market will have a hard time breaking through.

PERSONALIZATION

For a service that aims to be an assistant in the home, Alexa is still surprisingly stilted in her interactions. To become a true companion, she'll have to **DEVELOP BETTER LANGUAGE SKILLS AND LEARN TO IDENTIFY MULTIPLE VOICES** —not just a user's own, but also a spouse's or child's—and respond accordingly.

KILLER APPS

Inevitably, Alexa will live or die based on which services and applications its partners choose to build for the platform. The trick for Amazon will be **MAINTAINING QUALITY AND VALUING CONVENIENCE OVER COOL.** The best applications for Alexa are the ones that are simple, useful, and addictive, like asking for the weather forecast.

one?" "He was very specific about it," says a former product manager involved with the Echo's development. "I remember [going over an interaction] in a session with Jeff, and he was just like, 'This is not going to work. People don't want to go through all these steps, 'cause it's annoying.'" The teams killed a lot of promising applications to streamline the user experience.

When Amazon announced the Echo in late 2014 and then rolled it out to beta testers and the tech media, the reception was mixed. Many felt the product was cool and different—certainly a departure for Amazon—but they questioned its utility and immediately launched into Siri comparisons. Thus began an inevitable pitting of the two voice assistants against each other in knowledge games, which is a fundamental misunderstanding of Alexa's mission. Both services have cloud-based "brains" that are constantly updated, in part, through user-generated questions, so it's no wonder that Siri, several years older than Alexa, is smarter. Furthermore, Alexa was developed for a totally different environment than Siri. When placed in the home, Alexa is a star.

Amazon aggressively added features before the Echo's launch this year, including the ability to sync with Google Calendar and read books aloud from Audible.com. It also made waves by announcing a $100 million Alexa Fund to attract third-party developers to build on its platform and integrate the voice interface into their software and hardware. Though the list of initial partners was short, it nevertheless offered insight into Amazon's vision of the connected home. With Scout Alarm, an Internet-connected security system, you can monitor your home right through Alexa; with Orange Chef, a cooking-assistant service, you can ask Alexa for recipes; and with Garageio, a Wi-Fi–connected garage-door opener, you can make sure your car isn't getting battered by the nor'easter raging outside.

Amazon's fund seeks to establish what's missing from current connected-home devices: one service—and one voice—to unite them all. While there have been a slew of promising inventions in recent years that are capable of turning our homes from dumb to smart, these gadgets haven't actually made our lives easier; instead they've left us with an ever-growing number of separate apps, remote controls, and operating systems to monitor. "Alexa removes these barriers and opens up a world of new interactions," says Dave Shapiro, cofounder of Scout Alarm.

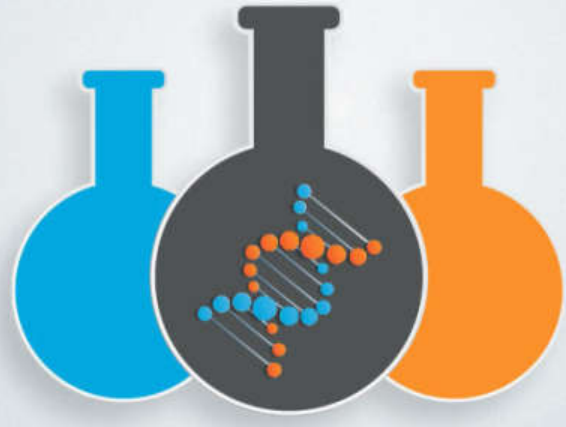
The challenge for Alexa will be remaining agnostic as its ecosystem grows. The fact is, Amazon is no more likely to build a dishwasher than Apple is to create a microwave, so it must rely on third parties like GE and Whirlpool to support its voice service. That means creating a platform so universal that it might even welcome products from competitors like Apple and Google.

Amazon's fund seeks to establish what's missing from current connected-home devices: one service—and one voice—to unite them all.

As promising as voice technology is as a means of controlling the home, it's likely only a stepping stone. The real achievement, industry insiders say, will be when Siri or Alexa can learn your patterns well enough to automate these tasks altogether. Which means that the voice interface of the future may be the one that all of our dishwashers, refrigerators, and air conditioners use to speak to each other.

Illustration by ROCK3RS

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"I'm giving voice to those who don't ordinarily have voice"

As *Empire*, Fox's high-octane, *King Lear*–esque prime-time smash about the ascendance to superstardom of a musical family, returns for its second season, creator and executive producer **Lee Daniels** explains why the show resonates with viewers and what's happening below the surface.

INTERVIEW BY J.J. MCCORVEY
Photographs by Zach Gross

Empire's first-season finale in March was the highest-rated for a new series in the past 10 years. How do you approach writing a show that has connected with so many people?
Everything I do has to come from my experience or those of people I know. Situations I've been in, or food that I've tasted. Experiences that are real and honest to me. Season 1 dealt with a lot of the issues that I grew up dealing with. So now the challenge is: Okay, what stories can I honestly tell? Now people know who I am. It's a very odd feeling. I didn't know how famous one could really become from TV. I've never really paid attention to it or watched it.

***Wait, you didn't watch TV before* Empire?**
As a kid, yeah. Like, *The Brady Bunch* and *Good Times*. I watched CNN, and then I gave up on that. I watched BBC and National Geographic. And then my boyfriend got me hooked on *The Real Housewives of Atlanta* and I got seduced into TV that way.

Season 1 of* Empire *tracked the rise of Cookie and Lucious, the music entrepreneurs and parents whose family is at the heart of the drama. What are some of the story lines from that season that came directly from your life?
I've said this before—the whole flashback scene where Lucious throws [his son] Jamal into a trash can is very real. It really happened. Walking down the stairs in your mother's heels in front of your father is a real experience. Having relatives who are in jail or selling drugs, and then turning that into a real and legitimate business is real. These are people who exist in my family.

The show makes it dramatic. It becomes fun because we have to make light of it. And we have to have entertainment, and we want it soapy, so we're sort of winking at the camera and having fun with the audience. But you know, under that laughter there's some serious shit going on and issues being talked about.

***What can fans expect to see in season 2 of* Empire?**
There's a financial change that has come with the success of the show. Family members, friends from college, all sorts of people are coming at you. It gets real. So now on the



Hard truths
Daniels uses the over-the-top drama of *Empire* to explore real family dynamics.

show we're addressing the African-American experience with money. People with money. We explore Cookie's and Lucious's pasts. We explore how their children connect to the impoverished, because they've never even experienced what it's like to be hungry. It's what my kids are going through right now, when they're around cousins and stuff. It's powerful, because it's real. Does that make sense?

It does, and I'm going to come back to it—
Well, wait a minute. Let me tell you something else. I got a lot of flak for portraying Lucious and Cookie as heroes for being drug dealers, and [what that means for] the representation of the African American. But I've always gotten flak, from *Monster's Ball* to *Precious*. And that's part of being an artist. Telling the truth is unsettling to people. What's so great about this particular story is that Cookie's mother will be indicative of my mother. My mother never did drugs, never spent a day in jail, and yet she had kids, inclusive of myself, who spent time in jail. What does that say about a woman who's gone to church every day, and is a strong single parent?

You tackle a lot of topics on the show that are largely taboo in the black community. Jamal, the R&B star, comes out as gay. His brother Andre has bipolar disorder.
And it's so very disturbing. Because African Americans want the best possible role models, and we should. But what happens is, anything that doesn't fit within the norm is dismissed. I just remember the idea of going to a psychiatrist or a therapist of any kind in my day was like, "What are you talking about? That's for white people. Are you crazy?"

Empire's cast is mostly composed of minorities, but you've also put a lot of effort into making your writing team diverse. Can you talk about the impact of those choices?
Listen, I can't win for losing. I get in so much trouble when I talk about making it a point to have African Americans to speak about the African-American experience. But I also have a white producing partner [Danny Strong], and he's great at one thing that I'm not good at, which is structure. I'm great with specificity, and with nuance and character, but not with story line. I can't think about what's going to happen 10 episodes in. That's what makes us an incredible partnership.

But in regard to the actual verbiage and that kind of stuff? That's the reason we have this wonderful group of black people, women, and Puerto Rican and Hispanic writers. I'm told it's historic, really. I'm giving voice to those who don't ordinarily have voice. It's something I've strived for from the very beginning of my career. And now, to be able to do that in a way that isn't just in front of the screen, but also behind the screen, is epic. I am the most content that I've ever been in my career. I'm proud to get up to go to work.

Do you feel a responsibility to shine a light on things people often overlook or don't know much about?
The minute I start feeling responsible to everybody, then I start editing my thoughts and my work. And then I'm trying to be safe, and I don't want to be safe. The concept of responsibility lies in a place of sometimes not being honest.

There are certain films that I've passed on that were about historic people. If they can't be *flawed* and have their story told in a very truthful way, then I'm not interested. Because no one is perfect.

***Is that the reason you passed on directing* Selma?**
Ohhh, now your claws are coming out! [*Laughs*]

I think the reason I didn't do *Selma* was bigger than that. We were trying to get the movie financed, and I had already done a civil rights movie, which was *The Butler*. And I thought doing *Selma* would have been a repeat. I didn't want to be known as that guy.

But yeah, Martin Luther King Jr. was a human being. Let's just say *my* interpretation of King would have been different.

You're developing a movie based on Richard Pryor's life. What have you learned from working in TV that you're now applying to filmmaking?
I've learned that the studios and the networks aren't the enemy. Before *Empire,* I'd never collaborated with anybody before. I was the be-all and end-all. So I've learned that, at least with Fox, it's a collaboration, which is something I didn't know how to do. I think it's also made me a better filmmaker, because the art of television moves at a pace that is ferocious. It's quick, quick, *snap snap snap,* and you have to make the decisions pretty fast.

"If they can't be *flawed* and have their story told in a very truthful way, then I'm not interested. Because no one is perfect."

You just signed a multiyear contract with Fox to develop, write, and direct new TV projects. What will you be working on under this new deal?
Let me just tell you: Y'all need to strap up, because y'all ain't ready. I can't believe they were stupid enough to let *me* in on prime-time TV! Just sit down in front of the television, have your cocktail, and get ready for Lee Daniels. Because we're just beginning. That's all I can say about that.



LEE DANIELS

30-SECOND BIO

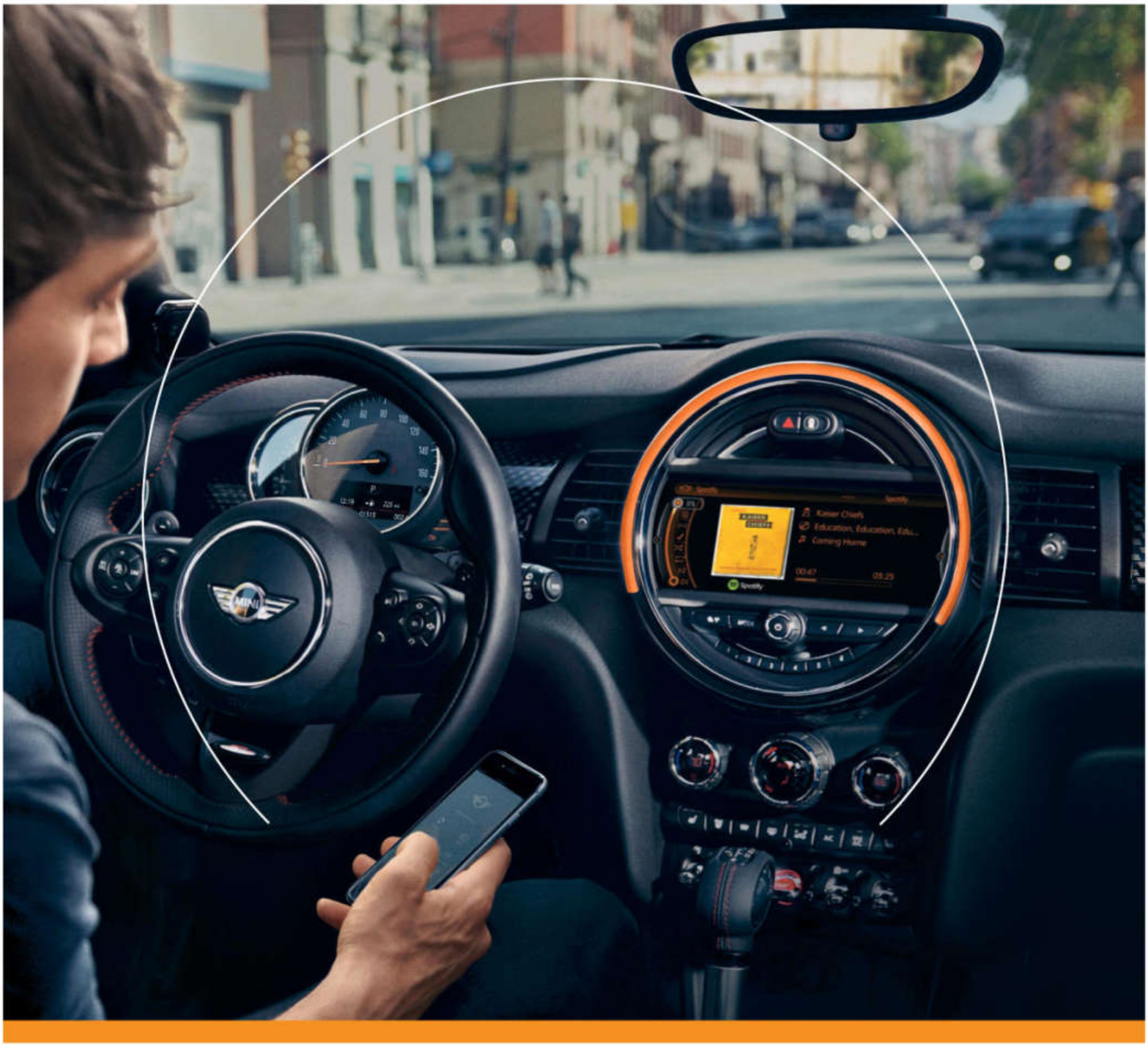
Hometown
Philadelphia

Filmography
The Butler (2013), *The Paperboy* (2012), *Precious* (2009), *Tennessee* (2008), *Shadowboxer* (2005), *The Woodsman* (2004), *Monster's Ball* (2001)

Celebrity friends
Oprah Winfrey, Lenny Kravitz, Naomi Campbell, Timbaland

Casting approach
"It's instinctive and intuitive. And sometimes completely radical. I remember people saying, 'Are you serious? You really want to cast Mo'Nique as Mary in *Precious*? She's a comedian.' But I remembered Richard Pryor in *Lady Sings the Blues*. The most fascinating, powerful performances come from people who are comics."

Grooming: David Cox at Art Department



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Walk this way

Groupon founder Andrew Mason's app-based walking tours are striking new paths in San Francisco and beyond.

BY SARAH LAWSON
Illustration by Jun Cen

What's a tech entrepreneur's second act after leaving the company he started? If he's former Groupon CEO Andrew Mason, he takes the hot media trend of the day (podcasting), pairs it with sophisticated location technology, and invites journalists and radio producers to create immersive walking tours that explore a city's forgotten corners. Launched in the Bay Area earlier this year and now available for nine cities around the world, Mason's Detour app offers a collection of well-produced audio tours with an intriguing set of narrators and guides (see the San Francisco tours, below). But what really sets Detour apart is the app's inventive use of iBeacons and smartphone GPS to track its users and customize the tour to an individual's pace and pauses. The results are rich, seamless soundscapes that subtly pull people out of their comfort zones. Tours, which start at $5, are being added to Detour each month. Next year, Mason will open up the platform to allow others to create walks, vastly expanding the app's reach.



Tour: Architecture With Rick Evans
Stop: Crocker Galleria roof terrace

"The rule is that if you build in San Francisco, you must give back open space to the public. But you don't actually have to tell people about it . . ."

Rick Evans
Architecture historian

Tour: The Castro With Cleve
Stop: AIDS Memorial Quilt former headquarters

"People would come in to make their own panels. They could barely walk, and they'd come in and sit down at a sewing machine and [say,] 'It's for me. I have to make my own, because there's nobody left alive to make my quilt panel.'"

Cleve Jones
Activist

Tour: Soundwalk Presents the Tenderloin
Stop: The Tenderloin

"I don't know what happens to these folks as soon as they get gentrified out of here."

John Perry Barlow
Writer and activist

Tour: Beyond the Painted Ladies
Stop: The Fillmore

"Grateful Dead shows were not just about music. They were about drugs—acid tests."

Liz Gannes
Journalist

Tour: Beat Generation
Stop: City Lights bookstore

"Like them or don't, but the Beats changed these streets and this country with what they wrote, how they wrote, and the no-holds-barred lifestyle they embraced."

Ninna Gaensler-Debs
Writer

Tour: The Fisherman's Fisherman's Wharf
Stop: The Fishermen's and Seamen's Memorial Chapel

"You can fool the ocean lots of times, but the ocean only has to fool you once."

Mike "Candy" Mitchell
Fisherman



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Sea change

Carnival's new cruise brand wants to create an army of do-gooders in flip-flops and shorts.

BY KENRYA RANKIN NAASEL
Photograph by Geordie Wood



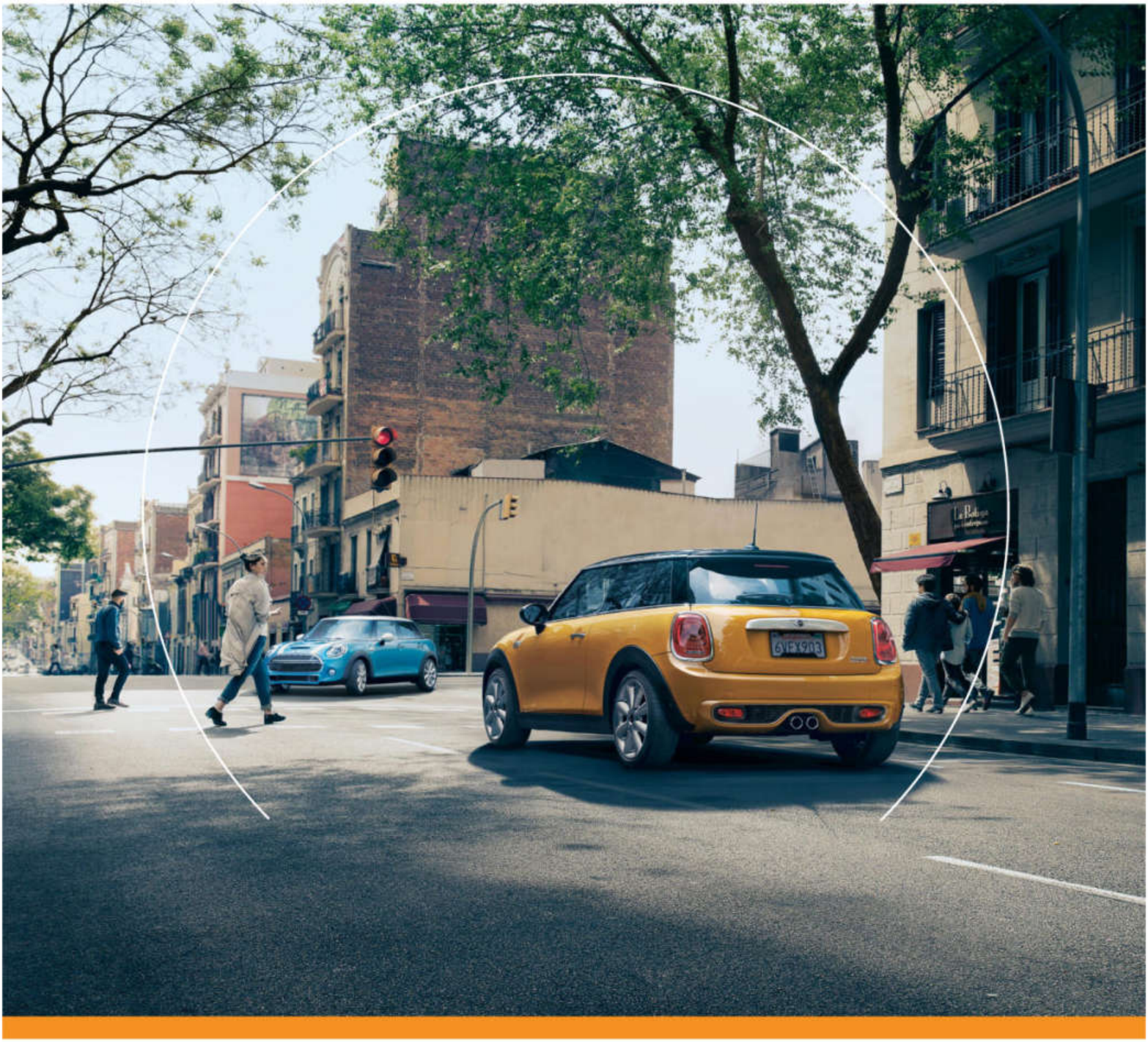
When a company dons a cape and says it wants to save the world, a common response is an eye roll—especially if that company is Carnival Corp., a $16-billion-per-year cruising behemoth in an industry that's under frequent fire for its negative environmental and social impact.

Yet, making a positive difference is what Carnival says it intends to do with Fathom, a new cruise line that puts immersive social-impact travel, in the form of "voluntourism," at the heart of its brand. Fathom, which is the brainchild of Tara Russell, the recently appointed president of this new brand and the global-impact lead for Carnival, will launch in April 2016. Its dedicated 710-person ship, the *Adonia*, will send passengers on multiday volunteer missions for local charities via trips to the Dominican Republic and—in a first for any American cruise line—Cuba, starting in May.

Though some cruise lines have offered volunteer work as part of their shore excursions, Fathom is alone in making it a centerpiece. The initiative could have huge influence, resulting in as much as 200,000 volunteer hours from 18,000 passengers in the Dominican Republic over the course of a single year, according to Russell. And Carnival hopes Fathom will do some good for its bottom line too. The company has worked to rebuild its image since the infamous "Poop Cruise" of 2013 (when an engine fire left one of its ships stranded at sea for days). Last year, it welcomed 10.6 million passengers, up from 10.1 million in 2013. But attracting younger customers remains a struggle. The average cruisegoer today is nearly 50 years old, and, according to a 2014 Harris Poll, 58% of people who had never been on a cruise were actually less likely to take one than they were the year before. Fathom could be the ticket to creating a new generation of loyal cruisers—and a new paradigm for the entire industry.

"Unless you can build a market-driven solution, it's just not financially sustainable," says Russell,

Open horizons
"I see opportunity everywhere I look," says Fathom president Tara Russell.



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who previously led Create Common Good, a Boise, Idaho–based job-training and placement not-for-profit, which she founded in 2008. In 2013, Carnival CEO Arnold Donald invited her to discuss new social-enterprise opportunities for his company, and officially hired her last June. "At that time, we had about 78 million passenger-cruise days per year, [and I thought] it would be awesome if there was a way to tap into that human capital to do direct good," Donald says. Russell's team surveyed thousands of North Americans and found that while 40% of them had never been on a cruise, half *had* donated to charity or volunteered locally. And,

"Fathom will over-index with millennials, who over-index on desire for social impact," Donald says.

most crucially, when Russell asked if they'd board a cruise to volunteer abroad, the average age of those who answered "yes" was 34. "[Fathom] will probably over-index with millenials, who over-index on desire for social impact," Donald says.

The Fathom model is quite a departure from the traditional cruise experience. Before they even set sail to the Dominican Republic, passengers will receive emails introducing them to the area in which they elect to serve. The first two days at sea will include Spanish lessons and cultural films about the country. Upon arrival, travelers will work with not-for-profit partners on projects like planting trees and making ceramic water filters. After the trip, Fathom will keep passengers updated on the projects and connect them with volunteer opportunities near their hometowns.







Beginning in April, Fathom's *Adonia* will pair passengers with water-filtration and agricultural projects in the Dominican Republic.

Some skeptics say Fathom smacks more of opportunism than altruism. For one, the experience comes at a premium: Trips to the Dominican Republic start at $1,540, while a ticket to Cuba costs $2,990. (A regular seven-day trip with a stop in the Dominican Republic on the *Carnival Glory* starts at $509 per person.) Russell says the ship's operating expenses are split among fewer passengers (the *Glory* holds four times as many people as the *Adonia*) and that a portion of each ticket goes directly to the line's local NGO partners. Still, the *Adonia*, marketed as a vehicle for social good, may very well financially outperform its previous life sailing out of the U.K.

Fathom could also be viewed as a strategic play for the Cuban tourism market. While the U.S. government still prohibits leisure travel to Cuba, thawing diplomatic relations have made it easier for people to go under the guise of humanitarian projects. "There is some first-mover advantage for the company if they get permission from Cuba for the next step," says Jaime Katz, a Morningstar analyst who covers Carnival.

If Fathom's cape is indeed more cash-money green than Superman-red, the question is: Does it matter? Showing a profit will improve Fathom's chances of scaling its efforts (Russell envisions adding three to five ships over the next 10 to 15 years). Which means even more benefits for Fathom's NGO partners, like David Luther, executive director of Instituto Dominicano de Desarrollo Integral. "This long-term systemic approach is radically different," he says. "The possibilities are enormous."

THE GOOD CRUISE

FATHOM'S *ADONIA* SHIP OFFERS BASICS SUCH AS A POOL, GYM, AND GAMES DECK, BUT THERE ARE OTHER "AMENITIES" YOU'D BE HARD-PRESSED TO FIND ON A TYPICAL VOYAGE.

TRADITIONAL CRUISE	THE FATHOM EXPERIENCE
Multiple ports of call	Passengers will dock in just one locale for each trip, to offer a more **culturally immersive experience**.
Onboard casino	Ashoka, a global network of social entrepreneurs, will lead **"personal growth" workshops** focused on volunteering in developing countries.
Broadway show	Entertainment will consist of **Dominican and Cuban food, music, and films**, so that the ship feels like an extension of its destination.
Luxury retail brands	Fathom will sell "products with a purpose," including **goods from local organizations**, such as Chocal, a co-op for female chocolate producers.


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Kicking it
Stance's innovative materials and bold patterns have earned fans among both athletes and entertainers.

Putting its best foot forward

Stance has raised $86 million to energize the sock market. Now it's looking to move into something more intimate.

BY EVIE NAGY
Photograph by Elizabeth Renstrom

Before Stance came along, Hansen's Surf Shop didn't waste much time thinking about socks. Anyone who wanted a pair could dig through a wicker basket and grab one, but the store's real focus was a huge wall of lovingly displayed sneakers. Today, the Encinitas, California, institution has a different attitude. Instead of sitting in a sad little basket, socks have fancy racks of their own throughout the store. Almost all of the brightly colored offerings are made by Stance.

With its unusual designs and high-tech materials, Stance is turning athletic socks into a big fashion business. The socks range from $10 to $25 a pair, and are sold at both Foot Locker and Nordstrom, along with thousands of specialty shops like Hansen's. In March, the company raised $50 million in a series C round, bringing its total funding to $86 million. Actor Will Smith and Miami Heat player Dwyane Wade are investors, and in April the company signed a deal to be the NBA's official on-court sock (yes, the NBA has an official



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on-court sock). LeBron James is a fan, and Rihanna likes them so much she created her own Stance line, which hit stores in July. There are also branded Stance socks designed by the likes of basketball star Allen Iverson and electro-pop artist Santigold.

Stance's popularity is the result of savvy partnerships and marketing, but the socks are also simply a product that customers consider a huge improvement over existing options. Their eye-catching designs are enhanced by a proprietary dyeing process that keeps images intact even when the material is stretched. They are both soft and durable. "The aesthetic draws people in," says Stance president and cofounder John Wilson. "Then the technology that we've invested in—they feel that when they put them on."

Stance CEO and cofounder Jeff Kearl wasn't much of a sock aficionado before he and four friends decided to start the company in 2009. At the time, he was looking for a new direction after stints at various startups (including Logoworks and Ancestry.com) and was intrigued by companies such as Lululemon and Under Armour, which had found success by reinventing distinctly untrendy products. "I went to Target and started looking at categories," Kearl says. He mulled over sunblock, school supplies, jewelry, and other items, trying to find something that he could improve upon. Then he hit the sock section. "It was like, black, white, brown, and gray—with some argyle—in plastic bags, and they were really inexpensive. I thought, We could totally [reinvent] socks, because everyone was ignoring them."

Kearl took his idea to Wilson, a former Reef president and Oakley executive, as well as three other startup veterans: Ryan Kingman, Taylor Shupe, and Aaron Hennings. As they began looking into the world of socks, the group got more and more excited. "We became convinced that everyone was really sleepy here," says Kearl. "No one had really created the lab environment where you could innovate on a platform like socks."

Stance has now created just that: a sock-focused innovation space located inside the company's San Clemente, California, headquarters. The lab—known as SHRED, for sock, hosiery, research, engineering, and development—sounds like a joke, but it houses state-of-the-art Lonati knitting machines from Italy and conducts serious research on materials, fit, flexibility, wicking, and other performance features useful for a range of sports, from running to motocross. "Socks are a huge part of mobility and daily comfort," says Shupe, Stance's chief product officer. "If an athlete loses mobility because he has athlete's foot or blisters, it can dramatically affect his entire performance."

But for many Stance fans, it's the look that really counts. Kearl says Stance's name refers as much to self-expression as it does to athletics, and the company's marketing focuses on design over performance specs. Stance is known for its bold prints: Popular styles include the Wagner 2, which features fluffy white clouds, and the Patriot, which has red stripes on one sock and a blue-and-white star pattern on the other.

Though Stance started by selling men's products, the company's two-year-old line of women's socks now accounts for 20% of sales. Next, it plans to expand into another branch of basics: underwear. A line of men's briefs is set to debut later this year, followed at some point by women's. "We probably wouldn't have done it so soon, because I feel there's a lot of growth left for socks," says Kearl. "But one of our retailers actually called me and said, 'Look, every week someone comes in and says they're the Stance of underwear. At some point, I'm going to let someone else in if you don't [do it].'"

Stance's undergarments will use a proprietary fabric derived from milk protein and beechwood that minimizes bunching (aka wedgies), and will actually nourish and protect the skin. It's another area where Kearl thinks the big industry players have grown complacent. "They're doing it the same way they always have, just like they were with socks," he says. "No one has disrupted underwear."



Showing their stripes
Stance products undergo lab tests like this one, which makes sure socks adequately wick away moisture.

Courtesy of Stance

"The aesthetic draws people in," says Stance president John Wilson. "Then the technology that we've invested in—they feel that when they put them on."

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RUNNING LEAN



BRYAN GERSTNER ▲

A Conversation With Two Men and a Truck Franchisee Bryan Gerstner and Ryder Business Development Manager Michael Cates

Anyone who has moved into a new home or office knows how complicated that seemingly simple operation can be. For full-time movers, the complexity is multiplied, so partnering with a transportation-solutions company like Ryder is critical. Here, Bryan Gerstner, a Two Men and a Truck franchisee with franchises in Kansas City, Mo., discusses the benefits of Ryder's truck-fleet management resources, while Michael Cates, a business development manager at Ryder weighs in on the unique scope of its solutions.

Michael, in what respect was Ryder able to provide genuine value to Two Men and a Truck right out of the gate?

MICHAEL CATES: Ryder brings a level of know-how and a network of resources that would be virtually impossible for any customer to develop or match in-house. For Bryan's business, specifically, we analyzed their needs and were able to draw on our own historical performance records of vehicles used in similar industry applications to develop the most efficient, reliable fleet specifications. Those included things like figuring out the most likely or useful truck manufacturers, engine types, transmissions, gear ratios, special body configurations, and other factors. And on top of that, we were able to optimize the reliability, cargo accessibility, and storage capacity in Bryan's trucks.

Bryan, what compelled you to work with Ryder?

BRYAN GERSTNER: It was a package deal—they'd take care of all our maintenance, deal with DOT requirements. They'd handle that side of the business so I could focus on other things that would help us grow, like marketing. About six months into the program, all the invoices were checking out, nothing was being charged back to us, and my managers told me that all the preventative maintenance schedules were being kept up. That was the "aha" moment for me. They were delivering on what they said they were going to do for us.

Michael, what are some of the tangible, on-the-ground benefits that partnering with Ryder brings to a franchise that other fleet-management or solutions companies might not offer?

MC: Ryder can extend the geographical service area of any company's existing operations through our network of hundreds of service centers nationwide. But we also have roadside assistance capabilities and can provide replacement vehicles—as quickly as within two hours—to ensure reliable deliveries no matter how far a driver might be from the company's home base of operations.

Bryan, you've been in the moving business for two decades. What's the most significant change over the past 20 years?

BG: Without a doubt, it's how much higher the customer-service standard is. Back in 1996, when I started, the equipment that companies were using was not nearly as sophisticated as what we use today. We weren't stretch-wrapping or shrink-wrapping every item on the truck. That sort of service is now standard. It's just a much better, much higher-quality product today. And on top of that, customers' expectations are much higher. We pay very close attention to our referral rates, the satisfaction scores and the feedback we get. Our minimum standard for customer satisfaction is a score in the upper nineties, out of a hundred. Back in the day, we were nowhere near that.

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Organ donors

How a series of thumb-drive-size chips may revolutionize pharmaceutical development

BY ADAM BLUESTEIN
Photograph by Andrew Tingle

They may look like simple chunks of plastic to the average person, but to a drug researcher they could be the key to transforming the notoriously expensive and inefficient process of bringing new medicines to market. Called organs-on-chips, these devices are actually miniature versions of lungs, kidneys, hearts, and digestive tracts housed within layered polymer. And though they don't look like their full-size counterparts, they act like them, sustaining living human cells in microenvironments that mimic conditions inside the body. These artificial micro organs, which are being developed at Harvard, MIT, UC Berkeley, and other places, give researchers the ability to model what happens in humans when drugs or irritants enter the system. They promise to be far more accurate than traditional lab tests on cultured cells or animals, eliminating the false starts and dead ends that can help drive product development costs to $4 billion or more for a single drug. In June, Johnson & Johnson announced several drug-research programs using devices from Cambridge, Massachusetts–based Emulate, a spin-out from Harvard's Wyss Institute for Biologically Inspired Engineering. The pharma giant will use Emulate's lung and blood-flow-simulating thrombosis chips to study clotting, a side effect of immunotherapy and oncology medicine, as well as the company's liver device to predict drug toxicity. It's a huge vote of confidence in the future of tiny organs.

ANATOMY OF A MICRO LUNG

1. **Material**
 Emulate's lung chip is made from layers of transparent polymer with micromachined channels.
2. **Structure**
 In the central channel, a porous membrane separates two layers of human cells. As in a lung, oxygen flows over one layer, while the other is exposed to a bloodlike liquid.
3. **Mechanics**
 The device mimics the push and pull of breathing by applying suction to the side channels.
4. **Application**
 Ports in the chip allow researchers to expose the different sides of the lung tissue to drugs or toxins.

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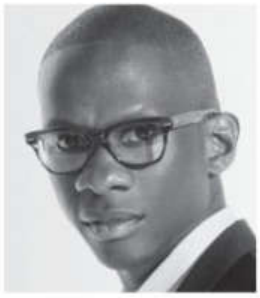
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Face forward
As manager of L'Oréal's Women of Color Lab, Atis develops makeup for a global market.

The full spectrum

L'Oréal chemist Balanda Atis is helping the cosmetics giant break color barriers.

BY ELIZABETH SEGRAN
Photograph by Benedict Evans

When the Kenyan actress Lupita Nyong'o became Lancôme's first black spokesperson last year, fashion magazines and blogs welcomed the news as a sign that the legendary makeup brand is embracing women of color—especially those who have traditionally had trouble finding the right shades in drugstore aisles and department stores. On billboards and in magazine ads, the 32-year-old Academy Award winner wore the brand's newest foundations, in hues that were deeper and darker than anything Lancôme had previously released.

Behind the scenes, at the headquarters of L'Oréal Paris, Lancôme's parent company, Nyong'o's appointment signaled a broader effort by the cosmetics giant to stay ahead of consumer demand by placing diversity and globalization at the center of its strategy. In the U.S., the multicultural beauty market is currently outpacing the overall industry, posting a 3.7% increase in 2014, according to research firm Kline & Co. What's more, the global cosmetics industry is now worth an estimated $197 billion, and is growing by about 4% annually. In 2014, so-called new markets (anything outside North America and Western Europe) accounted for 39.6% of L'Oréal's $29.9 billion in sales. To take an even bigger slice of that international pie, the company is investing in products tailored to the diverse skin tones of women in places like South Africa and the Middle East, as well as in the United States.

One of the keys to this strategy is L'Oréal chemist Balanda Atis, who created the (literal) foundation for Nyong'o's Lancôme campaign and now heads L'Oréal's Women of Color Lab in Clark, New Jersey. The lab, which opened in 2014 and includes scientists, marketers, and product developers, is tasked with formulating groundbreaking products for multicultural women, including foundations, lipsticks, and eye makeup.

It's a personal quest for Atis, who grew up in a Haitian community in East Orange, New Jersey. Over the years, she saw friends and family struggle to find makeup that looked good on their skin. "The colors were often too red, giving the skin a bruised look, or too black, making the skin look muddy," she recalls. She joined L'Oréal in 1999 as a researcher in the mascara lab, where she racked up patents for products that make lashes plumper and

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longer. And though she appreciated her own company's attempts to be more inclusive, releasing makeup catering to African-American and Latina women with campaigns featuring celebrities like Beyoncé and Jennifer Lopez, Atis still found the new formulations too pale for many women.

This has been a challenge for the entire cosmetics industry, according to Karen Grant, a global beauty-industry expert at research firm NPD. "A cosmetics company needs to dedicate a lot of resources to successfully create products for a new market segment," Grant says, citing the cost of scientific research, focus groups, and educating retailers, among other things. And then there's the perception that women of color spend less on makeup than Caucasian women, which meant that the path of least resistance for many companies was to stick with the products they knew best. It's true that women of color have historically spent less on makeup: A recent NPD survey found that only 42% of black women use makeup, compared with 64% of white women. But Grant says this is largely because there are fewer products available to them. "It's a cycle," she says.

Atis wanted to change this dynamic. In 2006, L'Oréal's R&D team presented the company with new foundations that were meant to be a breakthrough for women of color. When Atis tried them, though, she still could not find a match for herself; the shades simply did not run dark enough. She told the head of L'Oréal's makeup division that its new range fell short, and was met with a challenge: If you think it's fixable, let's see what you can do. Though L'Oréal didn't release Atis from her mascara projects to work on foundations full-time, her managers allowed her to use the labs on the side. Atis quickly enlisted two other scientists who were equally committed to this mission, and the task force got started.

Over the years, Atis saw friends and family struggle to find makeup that looked good on them.

Finding the right data was the first step. For several years Atis's team crisscrossed the country, using special probes that measure light absorption to evaluate women's skin tones. Back at the lab, they used this information to create prototype shades. Their main hurdle was that darker colorants commonly used in the industry looked dull on skin.

The team's revelation came when they stumbled upon a rarely used pigment, ultramarine blue, that created deep, pure colors without sacrificing texture and vibrancy. It was a huge leap forward. During field tests, women with dark complexions embraced the new shades.

When Atis presented her research to L'Oréal's top brass, they pulled her onto the task full-time and eventually leveraged her work to create more than 30 new shades across L'Oréal's brands, from the mass-market Maybelline to the upscale Lancôme. "What Balanda started is still changing the game today," says Malena Higuera, SVP of marketing at L'Oréal Paris. "We're using these innovations to build first-to-market breakthroughs."

Atis's research team, meanwhile, has grown into the Women of Color Lab, where she has a new goal: to make sure that women in each of the 140 countries where L'Oréal products are available find makeup that matches the texture and color of their skin. "We're always looking at new colorants and other raw materials," she says. "We want to demonstrate that we can address the needs of women of color on a global scale through scientific innovation."



Illustration by Martina Paukova

HOW TO PURSUE A SIDE PROJECT

TAKING ON AFTER-HOURS WORK CAN BE DAUNTING. HERE IS BALANDA ATIS'S ADVICE FOR ACHIEVING YOUR GOALS.

Get comfortable with your team

- Spending days and nights together on the road and in the lab, Atis's team formed a tight bond. "We often had to crash in the same hotel room," she says. "I was raising my goddaughter, so sometimes I'd bring her to hang out with us while we worked." One of the chemists even ended up marrying her cousin.

Don't be afraid to press pause

- There were periods when Atis's group would work for several weeks and then take a break because of other ongoing projects and obligations. Atis also took some time off to adopt a child from Haiti after the 2010 earthquake.

Be resourceful

- Atis had to think creatively when she needed resources that weren't immediately available. To gather information about skin tones from a large sample of women around the country, she had her team tag along on L'Oréal's road shows and mall tours to collect this data. "We even persuaded the company to sponsor our travel," says Atis.

Make a compelling case

- It took time for Atis and her team to amass enough evidence to convince L'Oréal's senior management of the importance of their work. Atis says they eventually got through by showing L'Oréal the ecstatic feedback they received from women who had tried the team's new shades: "Patience was key, and it eventually paid off."

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Crowd capitalism

It won't be long before anyone can fund—and get equity in—a startup. Is that a good thing?

BY HARRY MCCRACKEN
Illustration by Heads of State

When Facebook announced in March 2014 that it was acquiring virtual-reality pioneer Oculus VR for $2 billion, the news caused jaws to drop throughout the tech industry. It also left at least a few of the 9,522 people who had contributed to Oculus's Kickstarter campaign less than two years earlier grumbling that they should be cut in on the windfall.

Sorry, crowdfunders: The $2.4 million you put up via Kickstarter entitled you to posters, T-shirts, and prerelease versions of the Rift headset, not equity participation in a landmark deal. But Oculus's journey from crowdfunding phenom to blockbuster acquisition did get people asking a bigger question. Sites such as Kickstarter and its archrival, Indiegogo, have had a transformative effect on how startups bootstrap themselves. Why shouldn't the masses be allowed to invest in new companies and have a chance at realizing a profit?

That pent-up desire has been particularly acute ever since President Obama signed the Jumpstart Our Business Startups Act in 2012. Better known as the JOBS Act, the

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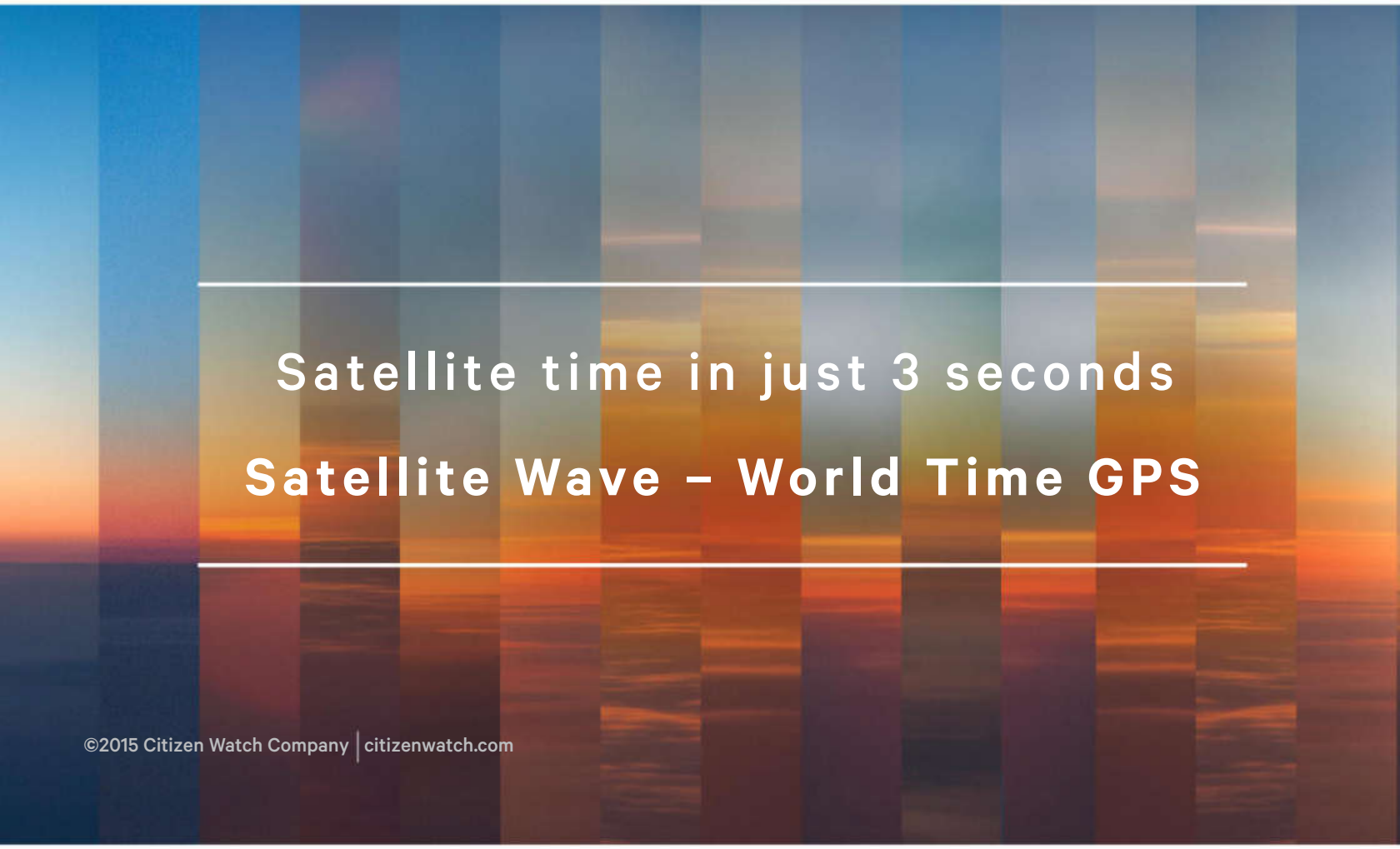
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law includes provisions designed to let startups use the web to sell equity stakes to large numbers of people. "For the first time, ordinary Americans will be able to go online and invest in entrepreneurs that they believe in," the president explained. Last summer saw the first of the JOBS Act's crowdfunding provisions take effect. And though one of the key parts of the law is still working its way through regulators, it may finally kick in next year.

Among the people monitoring the situation most avidly is Slava Rubin, the CEO of Indiegogo. When he began tossing around a concept for a company almost a decade ago with cofounders Danae Ringelmann and Eric Schell, it "was really about equity crowdfunding, before the word *crowdfunding* existed," he says. After concluding that the investment angle was unrealistic, they dropped it. It turned out that people would back campaigns out of sheer desire to help a promising project become reality—and the lure of getting a thank-you gift for their support. But that hasn't stopped the Indiegogo community from asking. "People are regularly saying, 'Can I invest? Can I invest? Can I invest?'" says Rubin.

"Our North Star is that we're trying to democratize funding," says Rubin of Indiegogo.

For a site like Indiegogo, the implication of the JOBS Act's equity crowdfunding mandate could be revolutionary. "It's really democratizing not just access to capital, but also equity for people who are not professional investors," says Sam De Brouwer, cofounder of Scanadu, which collected $1.7 million on Indiegogo in 2013 for its smartphone-based health-monitoring gadget, then went on to raise more than $45 million from venture-capital firms. "It's super-interesting." That is, if companies such as Indiegogo can make it work.



The door to equity crowdfunding finally swung open this past June with the implementation of the so-called Regulation A+, spurred on by the JOBS Act. It gives everyone access to investment opportunities that were formerly available only to "accredited investors"—people who earn $200,000 per year (or

$300,000 along with a spouse) or have a net worth of $1 million, not including their primary residence. A handful of platforms, including StartEngine and SeedInvest, are already using the regulation to entice people to support projects such as an improbable-looking three-wheeled car called the Elio (currently soliciting funds on StartEngine). But for startups, the required paperwork is daunting. And until a company has gone through the entire regulatory process mandated by the U.S. Securities and Exchange Commission, it is only able to secure "nonbinding promises of interest" from potential investors. It remains to be seen how many startups will try this route.

It's taken the SEC longer than anyone expected to hammer out Title III, the part of the JOBS Act that allows for broader-based equity crowdfunding. The matter has been stuck in limbo, but work on it is scheduled to resume this fall. In the meantime, Indiegogo is preparing for the possibility of helping entrepreneurs sell stakes in their new ideas.

That sets the company apart from Kickstarter, which states that it's interested solely in helping worthy creative projects—such as movies, artisanal foodstuffs, and inventive gizmos—become reality. Judging them on their potential to turn a buck would sully that vision. Indiegogo's mission is more all-encompassing, says Rubin: "Our North Star is that we're trying to democratize funding." The company is happy to raise money for nearly any goal that isn't illegal, dangerous, or a form of hate speech, including charitable efforts, paying for personal medical emergencies, and other activities that Kickstarter bans.

Still, the logistics involved with a site like Indiegogo getting into equity crowdfunding would be extraordinarily complex. "Facilitating regulated investments is very different from giving away T-shirts or hats or putting people's names in the credits of a movie," says Ryan Feit, CEO of SeedInvest and cofounder of the Crowdfunding



CROWDFUNDING GONE WILD

INDIEGOGO HELPED KICK-START THE CROWDFUNDING ERA, AND IT HAS TAKEN A BOUNDARY-PUSHING APPROACH EVER SINCE. HERE ARE SOME OF ITS MOST MEMORABLE MOMENTS.



AN INDIE START
January 2008

More than a year before Kickstarter launches, Indiegogo debuts at the Sundance Film Festival. Its name is explained by its initial target market: independent filmmakers.



FAMILY MATTERS
June 2011

Jessica and Sean Haley, a Florida couple, turn to Indiegogo to pay for fertility treatments. Their son, Landon, born in 2012, becomes the first crowdfunded baby.



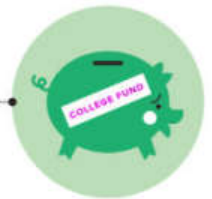
SMART MEDICINE
July 2013

Scanadu's Scout, a health-monitoring puck designed to read your vital signs, raises $1.66 million. Indiegogo always welcomed medical devices; Kickstarter forbid them until June 2014.



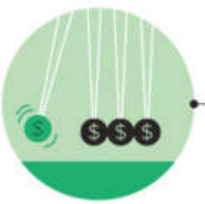
DUBIOUS CLAIMS
April 2014

GoBe, a gizmo that claims to count the calories you've consumed, raises more than $1 million. Experts call it an impossibility. It's not the first—nor the last—time Indiegogo is plagued by allegations of fraud.



PERSONAL AFFAIRS
December 2014

Indiegogo Life launches, letting users seek funding for personal events, including weddings, charitable campaigns, education, and medical emergencies.



THE LONG VIEW
January 2015

Successful campaigns can convert crowdfunding pages into ongoing e-commerce sites, continuing to accept contributions, manage perks, and distribute newsletters for as long as they like.

Professional Association. To ensure that its transactions meet SEC rules, Indiegogo might have to trade in its laissez-faire atmosphere for something a little more buttoned-down.

Turning crowdfunding campaigns into investment opportunities would also magnify the impact of any mishaps a company makes. In its current form, Indiegogo makes no attempt to vet the quality of campaigns or the competence of those who submit them, leading to occasional catastrophic failures such as Kreyos, a smartwatch company that raised $1.5 million in 2013. It collapsed before it had delivered watches to every entitled backer.

In the pre–JOBS Act era, the SEC managed the risk of investing in startups by restricting the practice to well-heeled individuals. With Title III, individuals with an annual income or net worth of less than $100,000 would be limited to investments of $2,000 or 5% of their income or net worth every 12 months. (Those with more financial wherewithal would have higher limits.) No company could crowdfund more than $1 million annually. "People will only be able to invest small amounts of money, so nobody can get burned too much," says Douglas Ellenoff, a securities lawyer. "It's very paternalistic."

Ask Indiegogo's Rubin how he'd go about making investing in private companies safe for the uninitiated, and he brings up the earliest days of e-commerce in the mid-1990s, when the very idea of making purchases over the Internet was new and scary. Rather than try to eliminate risk, the government allowed the emerging field to work out its own kinks. Today, he argues, "government needs to give the industry a little bit of time to figure this out, and then if it doesn't work they can then come in and regulate it more."

Although Indiegogo is eager to open equity to the masses, it's not a given that the companies that find success on its platform will be as enthusiastic. In 2013, security startup Canary raised $2 million on Indiegogo for its first product, a pint-size gadget containing a camera and sensors for monitoring motion, temperature, and air quality. "We got 10,000 customers immediately, which gave us great product feedback and enabled us to demonstrate to investors what sort of interest there was from day one," says Adam Sager, the company's cofounder and CEO. "That proved to be extremely helpful to us."

However, Canary would not have jumped at the chance to sell little bits of itself to random strangers. It prefers handpicked backers with relevant expertise, such as Michael Marks, the former CEO of manufacturing giant Flextronics. "Who you have around the table is as important as, if not more important than, the money you're bringing in," says Sager.

Indiegogo might have to trade in its laissez-faire atmosphere for something a little more buttoned-down.

When crowdsourced investing does become a reality, it could be less about getting in on the ground floor of the next billion-dollar acquisition than giving very small businesses a boost.

"There are some people who will be like, 'I can either invest in Facebook or IBM, or I could invest in this local pizza shop—I'd rather invest in the local pizza shop because I'm trying to support the community,'" says Rubin. Which means that this new form of funding could serve its purpose—even if that pizza place doesn't go on to become the next Shake Shack.

Illustrations by Orka Collective



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Los Angeles

A Q&A WITH JACLYN SHANFELD, CEO & FOUNDER OF SHOP HERS

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Jaclyn Shanfeld (left) and Shop Hers cofounder and creative director Jenna Stahl



Q

After noticing a need to disrupt the online consignment industry, how have you leveraged your location to build upon your consumer base while growing sales?

A | I was born and raised in Los Angeles, so it only made sense that I start my first company here. While my brilliant cofounders brought our vision to life, I was hard at work sharing my story with women who had had similar consignment experiences to mine. I am most proud of the response we hear from our sellers. They are genuinely happy after an item sells at a price that they are comfortable with. One sale always leads to another and another. As revenue grows month over month and milestones are reached, I am most proud of the platform we have created for women by women. We are slowly revolutionizing the way women shop.

Q

While in the process of acquiring multimillion-dollar funding rounds, how do you still find the time to build and grow the foundation of Shop Hers?

A | While funding is vital, it's also not indicative of success. Many companies have raised multimillion-dollar rounds of funding, only to go out of business shortly after. The foundation of your company, your team, and your vision is more powerful than any sum of money.

Q

As a modern entrepreneur working in a service-based landscape, what measures does your team take to target consumers who are increasingly mobile?

A | While we didn't launch our mobile app right away, we have always thought of ourselves as a mobile-first company. The majority of our user base are women with extremely busy, full lives. They don't want to miss anything, so the ability to both buy and sell on our mobile app is crucial. We have been featured in the App Store, which has really helped us to engage a larger audience.

Q

You launched the Shop Hers app earlier this year. How has that changed the way you've approached your business as it moves into a more modern, mobilized environment?

A | The launch of our mobile app has simplified the already sleek Shop Hers platform, helping us understand what is necessary and what is not for both buyers and sellers. It has opened our eyes to several new groundbreaking features that we have introduced recently and others that will be introduced soon. The Shop Hers community is one of the most amazing groups of women in the world. They live in 100 countries worldwide, and connect for one reason and one reason only—fashion.

>> RAPID FIRE

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- **Shiseido Sunscreen UV 40**
- **Powerbeats Wireless Bluetooth Earbud Headphones**

WHAT ARE YOUR FAVORITE APPS FOR KEEPING CONNECTED ON THE GO?

- **Inside**
- **Bime**
- **Enchant**
- **Dropbox**

WHERE ARE YOU OFF TO NEXT?

Off to Carmel for a 24-hour crash wedding planning session. I'm getting married in Pebble Beach and with my schedule, I have to make fast decisions.



Monterey Marriott Hotel

Q

What's next for Shop Hers?

A | Every month a new feature or improvement is added on Shop Hers. Every day is another chance to realize your fashion dream. This next quarter will be magical. My team is brilliantly cooking up new features that will make buying and selling luxury fashion virtually seamless.

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Stepping out
McCarthy knows that a woman's sense of style doesn't depend on her size.

Fit to be sized

Actress Melissa McCarthy wants to fix plus-size fashion.

BY KC IFEANYI

One of the benefits of being a famous actress is having unlimited clothing at your disposal. Except when you don't. "I could not find, with consistency, something that felt young and modern and easy to wear," says Oscar nominee Melissa McCarthy. "And then I started thinking, Why don't I make the closet?"

So she did: In August, McCarthy launched her first clothing collection, working with Sunrise Brands to create a line of all-size, fashion-forward basics. Priced from $54 to $169, Melissa McCarthy Seven7 items will be available in plus sizes at Lord & Taylor, Macy's, Nordstrom, and Lane Bryant. In a new twist for this market, MelissaMcCarthy.com will carry the same styles in sizes ranging from 4 to 28, small to 4XL.

The plus-size clothing industry generated $17.5 billion in the U.S. in the year prior to April 2014, and yet still 81% of plus-size women say they'd spend more on clothes if they had better options, according to a survey by online retailer Modcloth. Given that the average American woman is a size 14—which, coincidentally, is where plus size starts—that represents a huge untapped market. Lately, retailers have been getting better at serving plus-size customers: both Target and H&M have launched specialized lines in the past few years, and Isabel Toledo partnered with Lane Bryant in 2014 on an exclusive collection.

But even ultrastylish plus-size-only clothing isn't good enough, says McCarthy. She wants ultrastylish clothing designed for women regardless of what size they are, and she wants to be able to find it in the same places so-called straight-size women shop. "Women do not stop at a magical size 10 or 12, and I thought, Why would clothes?" McCarthy says. "I have been every size under the rainbow, but my style never changed."

Going in, McCarthy says, "I think there was the assumption that they would just make their line and I would slap my name on it." But the actress—who dreamed of studying fashion until her high school best friend, the now-famous shoe designer Brian Atwood, convinced her to do comedy instead—was involved in every stage of production, pushing the Seven7 team to make their designs more contemporary.

Her collection includes items like patterned pants and formfitting skirts that plus-size retailers have typically shied away from—but that's kind of the point, says McCarthy. "You can't say to people that a woman doesn't want this," she says. "I want it."

It's in the details

FOUR THINGS MELISSA MCCARTHY IS DOING TO MAKE HER LINE STAND OUT

01
Pricing for quality

"The quality and construction is often so bad," McCarthy says of plus-size clothing. Her line uses fine fabrics and finishes, and is priced on the level of a department store luxury brand.

02
Sizing for accuracy

Designers typically use fit models to prototype a collection, and those models are usually size 2 or 4. Not so with Melissa McCarthy Seven7: All garments in the collection are built on *two* fit models, one size 16 and the other size 22.

03
Designing for fashion

Plus-size clothes typically "either look young or incredibly old," McCarthy says. Her collection aims squarely in between, with trend-oriented pieces that are intended to be mixed and matched.

04
Marketing for approachability

A line designed for real women should be advertised on real-looking models. That means using nonmodels whenever possible, no blank stares, and no strange poses.

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Unhappy at work? Swipe right to tell the boss.

Startups are finding colorful ways to bring employee-engagement surveys into the smartphone age.

BY STEVEN MELENDEZ
Illustration by Asuka Watanabe

Bunny Inc., an online marketplace for voice-over actors and content creators, has more than 50 employees scattered among its offices in San Francisco and Bogotà, and work sites around the world. That can make it hard to gauge employee satisfaction, says cofounder and chief people officer Tania Zapata. "Working remotely with people can create issues in terms of cohesion," she says.

So for quick daily check-ins, the company uses an app called Niko Niko that lets employees swipe their smartphone screens to indicate their overall mood or answer more specific questions. A touch-and-drag happiness meter and corresponding smiley (or frowny) face lets employees express how they're feeling about everything from their relationship with their managers to the cleanliness of the offices. "You can act upon things that are not going very well faster than you would if you just wait for the person to say something," says Zapata, citing Internet speed issues in the Bogotà office as an example. "Internet was not as reliable as [in San Francisco], but it has improved," she says. "We probably haven't gotten [a frown] in a while."

Companies collectively spend about $720 million per year trying to measure and raise employee morale, according to a 2012 report by Bersin & Associates, and for good reason: Studies have long found that better-engaged workforces raise productivity, profit, employee retention, and even safety. They're also healthier and happier. Yet a Gallup survey released in January estimated that fewer than one-third of U.S. workers were engaged in their jobs in 2014.

Startups are hoping to change that by applying some of the same techniques publishers and advertisers use to boost audience engagement, such as notifications, apps, and emojis. As Didier Elzinga, cofounder and CEO of Melbourne, Australia–based startup Culture Amp, says, the past two decades have seen "a torrent of innovation in how we use data from our customers to improve our companies. We thought, Why do the marketers get to have all the fun?" Here's how four apps are changing office vibes worldwide.

RoundPegg
Launched 2009

To help get managers and employees on the same page, RoundPegg attempts to quantify the often

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imprecise notion of corporate culture and how workers fit into it. Through online personality surveys, its cross-platform web app assesses employees according to "36 values that define how we show up in the workplace," says David Lyon, RoundPegg's chief revenue officer—things like risk-tolerance, creativity, and informality. Understanding those qualities helps managers figure out how to keep workers happy and what rewards they might respond to, such as raises or opportunities for professional growth. Companies can also use the app to assess potential hires, Lyon adds, not just to weed out people who might not thrive in their culture but to understand how—and where—prospective employees might fit in.

Culture Amp
Launched 2012

Companies can administer new-hire and exit-interview questionnaires, engagement surveys, and one-question polls through Culture Amp's flexible web and mobile interface. "One of the key things is making the user experience better, so it's something you can do on an iPad, you can do on an iPhone, you can do on the web," cofounder Elzinga says. The tool automatically provides managers with interactive visualizations of results—including charts that compare employee responses across divisions and graphs that show how answers have changed over time—based on company-specific privacy settings, often in real time.

Niko Niko
Launched 2013

This intuitive app allows workers to answer questions about how they're feeling about different aspects of the job using an on-screen slider, adjusting a digital smiley face to somewhere between happy and sad. The selected expression is translated to a numeric score from 1 to 100, with aggregate scores delivered to managers or even shared with the whole company to spur discussion. "It takes some time, but people do open up to each other, and it's beautiful to see that," says the company's cofounder Dilyara Serazutdinova.

"It takes some time, but people do open up to each other, and it's beautiful to see that," says Niko Niko cofounder Dilyara Serazutdinova.

Last year, the Detroit charity United Way for Southeastern Michigan decided to take a serious look at boosting employee satisfaction after workers took the decades-old Gallup Q12 survey, which asks to what extent people agree with 12 proprietary statements about their work environment, relationships, and managers. The resulting scores "weren't awesome," says Ursula Adams, the nonprofit's director of employee engagement. They began using Niko Niko about a year ago, and morale swiftly rose. "Now it's very unusual for us to go below 80," she says. "What used to be completely acceptable—mid-70s—is now where people try to diagnose what's going on. It used to just be normal."



Getting engaged
Culture Amp cofounder and CEO Didier Elzinga wondered, Why do the marketers get to have all the fun?

Mood Ring
Launched 2014

Consultancy Aon Hewitt recently debuted this smartphone app, which surveys workers on a monthly, weekly, or daily basis about how they're feeling and channels the aggregate data back to managers almost instantaneously. Employers can set up single-question surveys that workers can answer at the touch of a button or with a short written response. Some companies use Mood Ring for daily check-ins, while others use it to gather quick feedback after all-hands "town hall" meetings. Aon Hewitt's global employee-engagement practice leader, Ken Oehle, stresses that the important element is getting back to workers quickly about whatever input they provide. "The kiss of death is to ask questions and do nothing about it," he says.



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Out of the box

Investors are placing big bets on meal-kit services like Plated and Blue Apron. Will ready-to-cook dinners change the way we eat?

BY ELIZABETH SEGRAN
Paper sculptures by Kyle Bean
Photographs by Aaron Tilley

My relationship with my kitchen is, well, complicated.

As a millennial, I came of age in the era of the farmers' market, so I have a deep appreciation for a locally sourced carrot or a misshapen organic pear. I dutifully read Mark Bittman and Michael Pollan, and admit to occasionally binge-watching *MasterChef*. But this love of food hasn't translated into a love of cooking, or even a skill for it. I'm just too busy, and there are too many appealing and easy options for eating out or picking up dinner. I'm not alone: According to a 2015 study by the not-for-profit Food Institute, millennials spend more on food outside the home than any other generation, averaging $50.75 per week.

Enter the meal-kit subscription service: a box full of premeasured ingredients, with recipes included, delivered to your door. For the kitchenphobic set, it's the gateway to a coveted home-cooked meal—with just the right amount of outsourcing. The concept was born in Sweden in 2007 with Middagsfrid (translation: dinnertime bliss), a grocery-delivery service for busy families that aimed to cut out the logistical headache of




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cooking. But the idea has reached its apotheosis here in the States, where diners now have nearly a dozen services to choose from.

The heavyweights here are Blue Apron and Plated, which both launched in 2012. Blue Apron now delivers roughly 3 million meals each month, while the more sustainable-food-focused Plated hits about 2 million monthly deliveries. Hot on their heels are a slew of other services, each with a slightly different gimmick. Din cuts up some of the ingredients for you. Peach Dish brings you Southern-inspired cuisine. And smaller, regional companies are popping up around the country like so many shiitake mushrooms.

Technomic, a food-industry consulting firm, predicts that the meal-kit-service segment of the market will grow to between $3 billion and $5 billion over the next 10 years based on current adoption rates. Venture capitalists are fire-hosing money at the space in spectacular fashion. Blue Apron alone has raised $193 million from investors, including a new $135 million round that values the company at $2 billion. Plated has snagged more than $50 million. HelloFresh, a European meal-kit company backed by notoriously competitive startup copycat Rocket Internet, recently closed a $126 million funding round with the goal of making more incursions in the U.S. market.

With all these companies duking it out for the boxed-meal consumer, the question is: Are there even enough of us to go around? Given that restaurants and grocery stores sell $1.2 trillion worth of food every year, even in the most optimistic scenario meal kits currently constitute one-quarter of 1% of food sales—and some think they will remain an extremely specialized solution for a sliver of the population. "I have a hard time believing that this is the way we will eat every single day," says Darren Seifer, a food and beverage analyst at the consumer research firm NPD Group. "This is a very niche option." To truly succeed, these companies are going to have to cater to a bigger crowd.

Nick Taranto, Plated's co–CEO and cofounder, describes his target demographic as the "evolved eater."

Boxed-meal services in the U.S. are predominantly aimed at millennial urbanites. "These are people with more expendable income who are looking for convenience and perhaps do not know how to cook on their own," says Brian Todd, president of the Food Institute. Although Plated and Blue Apron are available nationwide, they tend to do particularly well in cities like New York and San Francisco where grocery shopping can be a challenge without a car.

Big-city dwellers are also used to spending a lot of money on food, since their overall cost of living tends to be high. In this context, the price of a boxed meal, which can run as high as $15 per meal per person, may not seem as prohibitive. Nick Taranto, Plated's co–CEO and cofounder, describes his target demographic as the "evolved eater"—which is, according to the company's proprietary research, a 31 million–strong segment of the American population that cares deeply about the quality of their food and has enough disposable income to invest in eating well.

Of course, the urban, dual-income, no-kids demographic is a limited and fleeting one. When my husband and I have kids and a mortgage, for instance, will our weekly box still seem like a worthwhile expense? Will boeuf bourguignon and seafood paella go down well with the toddler set?

This is something the boxed-meal companies are thinking about, too. In December 2014, Blue Apron



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On the Menu

A LOOK AT THE MAJOR (AND MORE INTERESTING) MEAL-KIT SERVICES

The Big Players

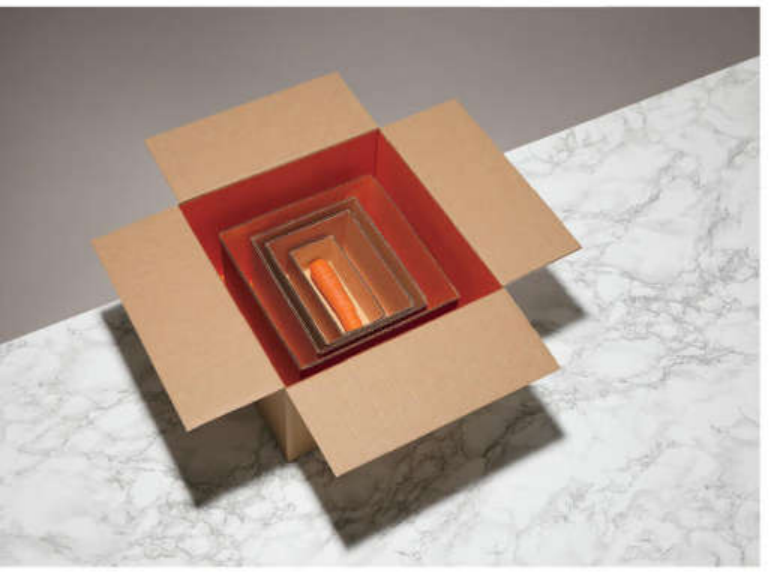
- The most flexible of the services, **Plated** lets subscribers choose how many weekly meals they want to receive. **Blue Apron** emphasizes local produce in its two-person and family meal plans. **Hello Fresh**, available throughout Europe and the United States, offers either classic or vegetarian food boxes.

The Specialists

- Atlanta-based **Peach Dish** ships Southern-infused recipes across the United States. **Din**, currently available in California and Nevada, focuses on cutting down meal prep to 20 minutes at most. Operating exclusively in and around Boston, **Just Add Cooking** uses its purchases to support regional purveyors. **Cooking Simplified**, a low-cost meal kit that provides 9 to 10 meals for as little as $32 per week, is being tested in the Bay Area.

The Health Nuts

- For certified organic ingredients and plans including omnivore, paleo, and gluten-free, there's **Green Chef**. Inspired by the food-as-medicine documentary *Forks Over Knives*, **The Purple Carrot** delivers plant-based meals within the Northeast and Mid-Atlantic. **Green Blender** appeals to the Pilates set, providing weekly supplies for specialty smoothies, such as its strawberry-beet refresh and spicy raspberry ratatouille.



announced a new Family Plan, which features kid-friendly dishes designed to serve four people at a cost of $8.74 per person, or $34.96 per meal. Given that the average American family spends $151 on groceries for the whole week, or $21 for an entire day, Blue Apron's program remains over many families' budgets. Still, Matt Salzberg, Blue Apron's founder and CEO, says that the family plan has quickly become a sizable portion of the company's overall business, although he declined to provide hard numbers. Boston's Just Add Cooking has managed to further bring down the price to $6.95 per serving for a four-person meal. Jan Leife, the company's cofounder and managing partner, says that family boxes represent 60% of the company's sales. Taranto, for his part, says that while $12 per meal is a costly dinnertime option for many, Plated has been very deliberate about going after the high-end market first. "As our logistical network expands, we will be able to deliver at lower price points to more and more people," he says.

To get ahead with working parents, these services face yet another hurdle: time. According to the latest data from the Bureau of Labor Statistics, working parents spend an average of 34 minutes each day cooking meals and cleaning up afterward (with women more than doubling the efforts of men). Box meals help to reduce the time spent meal planning and grocery shopping, but there's still the prep time of 30 minutes, give or take 15 minutes, per meal. And then there are the inevitable dishes to wash.

Even if boxed-meal companies don't ultimately succeed, they may change the way we eat. For instance, they might inspire grocery stores to better use technology to improve convenience and consumer experience. The Boston Consulting Group predicts that global online grocery shopping will be a $100 billion business by 2018. "That's not just the Amazons of the world," says the Food Institute's Todd. "That's actual grocery stores building up online ordering and delivery systems." With the popularity of services like Blue Apron, he says that grocery stores may start grouping products into meals, so that you can pick up a package of ingredients to make chicken Parmesan or whatever you're in the mood for. "We're just at the dawn of this industry," says Plated's Taranto.

There's also the possibility that these services may be so successful that they end up eliminating themselves, teaching aspiring home chefs the skills they need to cook on their own and inspiring them to save money by buying ingredients in bulk, rather than per meal.

When my husband and I have kids and a mortgage, will our weekly box still seem like a worthwhile expense? Will boeuf bourguignon go down well with the toddler set?

Several months into my own Just Add Cooking subscription, my interest in the service has started to wane. My husband and I now occasionally skip weeks and dust off our cookbooks. I'm beginning to think we might be getting close to cooking like grown-ups, without training wheels.

Then again, the other day I tried to make leek soup, but accidentally used the wrong part of the vegetable—the tough, dark leaves. As my husband bravely tried to swallow the slimy green liquid I produced, I found myself thinking: This would never have happened with our box kit.



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FAST COMPANY



Why Airbnb, Google, Nike, and more are this year's hotbeds of Innovation by Design

Typography by Superfried

What defines world-changing design? We assessed more than 1,500 submissions for our Innovation by Design Awards, with the help of nearly four dozen handpicked judges. The finalists—some of which are highlighted on these pages—are business efforts that attack intense challenges with elegant solutions. From individual dreamers like 21-year-old Boyan Slat to startups like Slack and titans like Facebook, Google, and Nike, these initiatives use design to bend the universe to their vision. Disruption and design go hand-in-hand.

SLACK

A workplace watercooler with designs on replacing email and more

By Rick Tetzeli

In a conference room at the back of his Vancouver offices, past the bright faux-grass wall, elegant canopies covering a couple of meeting spaces, and a dozen busy young staffers standing in front of raised workstations, Stewart Butterfield is picking at his takeout lunch from a local Japanese joint, running through a quick history of Japanese emigration to Vancouver that culminates in a passionate recommendation of his favorite yakitori spot. He especially loves their chicken hearts. "They are to dark meat as dark meat is to white meat," he says. "It's simply more intense."

Butterfield—who runs the hottest business-software startup to come along in, oh, forever—is far more philosophical, ruminative, and entertaining than your typical CEO. Over the course of two days, our discussions ramble through topics such as contemporary academic philosophy, Phish, mergers and acquisitions, McDonald's, the dilemma of constraints and possibilities as reflected in software design and Christian Bök's *Eunoia* (a novel with five chapters, each of which uses a single vowel), constipation, Mark Zuckerberg, addictive sex, and librarians. And, yes, poultry. "I am suspicious of anyone who prefers white meat," he muses, grinning at his own gall. "They're self-deluded. It's simply impossible to prefer the texture or the flavor."

Butterfield feels the same way about Slack, his messaging/group chat/document-sharing application: It is impossible for him to imagine anyone preferring email or other traditional

Styling: Lacey-June Berry; grooming: Sonia Leal-Serafim. Sweater: Ralph Lauren; shirt: J.Lindeberg

Photograph by Clayton Cotterell



Slacker-in-chief
Slack CEO Butterfield, photographed in Vancouver on July 23, 2015

modes of office communication. Launched in late 2013, Slack has already attracted 1.25 million daily active users at hundreds of companies, including Comcast, Dow Jones, Expedia, Blue Bottle Coffee, Intuit, Zappos, and even NASA. According to the company, 800 million Slack messages were sent in July—up from 290 million in January—and there are currently 10 times as many users as there were a year ago. Customers seem to find it more useful, engaging, and just plain fun than any prior communication tool. Venture capitalists have noted that passion, backing Slack with $340 million (the company is currently valued at $2.8 billion). That's a heck of a lot of money for a startup that's just two years old, lacks a sales force, and is trying to take on Microsoft in the hypercompetitive market for enterprise software. For all of its buzz, the company has a long way to go before it poses a serious challenge to the industry's long-dominant players.

But if Slack continues to have this kind of impact, it could redefine the way we communicate at work. Using the software, much of a company's interaction takes place in lively group-chat "channels," which replace those endless reply-all email chains that have become a bane of modern corporate life. To share something, you simply post to the channel, rather than CC'ing a select group. If you need to alert someone specific, you can type her user name with an "@," à la Twitter, or send her a direct message. Slack syncs everything across smartphones, tablets, laptops, and desktop computers that are tied into that network.

"THIS WAS A TOOL PEOPLE WERE GOING TO SPEND THEIR DAY IN, SO WE SOUGHT TO BRING AN EMPATHY TO THE DESIGN."

The experience feels fundamentally different—more contemporary, more in tune with people's out-of-office digital lives—from what we have experienced for 20 years, closer to social media than old-fashioned email drudgery. Slack isn't just another office tool: It's a welcoming environment where employees (virtually) live. That's a big shift, enabled by and concealed in the app's thoughtful, quiet, and inviting design. Slack's look and interface aren't showy. Everything seems natural, and everything seems to work the way you'd expect it to. Slack is taking off not because it screams its ambition to replace your current work tools, but for a more profound reason: It wants to be your friend.

The night before our office lunch I meet Butterfield at Vij's, a local Indian spot where he has been a regular for the past 16 years. Butterfield has spent most of his working life in Vancouver, just a three-hour drive from Microsoft's headquarters in Redmond, Washington. The vibe at Vij's *(Continued on page 137)*

AIRBNB BRAND EVOLUTION

A service that makes you feel at home wherever you go

When Airbnb chief marketing officer Jonathan Mildenhall came over from Coca-Cola in June 2014, CEO Brian Chesky gave him a present: "The strategic North Star for the company," Mildenhall explains, the insight that Airbnb can help usher in "a world where all 7 billion people can belong anywhere." The company introduced a community-focused rebranding shortly thereafter that included a cleaner website and apps with splashier imagery, as well as the Bélo, its cheerful new logo. These changes began to communicate that Airbnb is the experiences users have, not just its website.

Since then, Mildenhall has continued this evolution by bringing to life Airbnb's values in a series of warm and fuzzy TV ads. "I knew that the most valuable source of storytelling would come from the community," he says. Step one, therefore, centered on users' stories—notably one about two men, former guards on opposite sides of the Berlin Wall, who were reunited as host and guest on Airbnb. Step two introduced the personal experience of using Airbnb: A woman, traveling alone, has her hosts treat her like family.

In July, the rebrand reached its apotheosis with a 60-second spot—which debuted on TV just after Caitlyn Jenner's emotional appearance at the ESPY Awards—in which a baby toddles his way down a hallway toward a glass door while a woman's voice asks, "Is man kind? Are we good?" The effect: The value of experiencing life through others' eyes is at the core of Airbnb's brand, placing it within the larger cultural conversation.

Next year, Airbnb will be the official housing sponsor of the Summer Olympics in Rio de Janeiro, giving the company a major in to the growing Brazilian market and a global platform for its message. After all, Mildenhall says, "When you get a universal human truth, there is no containing it."
—Jillian Goodman

Photograph by Chloe Aftel



The air I breathe
Airbnb CMO Mildenhall, photographed in San Francisco on July 27, 2015



GOOGLE CARDBOARD

A virtual-reality viewer for the people

Photograph by Daan Brand



iStockphoto (roller coaster, canyon, forest); Hans-Peter Merten/Getty Images (Eiffel Tower)

While folks wait for the 2016 release of the Oculus Rift virtual-reality headset (expected to cost around $1,500 with the appropriate PC to power it), Google Cardboard lets anyone curious about immersive 3-D worlds try them today—for free. "VR is a fundamentally new experience," says Alex Kauffmann, a senior interaction researcher at Google who oversaw Cardboard's design, "and in order to understand that, you just have to try it."

Cardboard simulates VR via simple hardware and sophisticated software. The physical viewer is just corrugated paper, two lenses, and Velcro. Assembly takes three steps, and with the latest version released this spring, users can insert a smartphone of any size. The DIY kit is free to download, and Google has given away more than 1 million Cardboard kits since its debut in June 2014.

The Cardboard app employs a series of clever tricks to create a remarkable VR experience. The app halves the screen into two images, which the lenses converge into one, and it taps the phone's accelerometer to track a user's movement to mimic looking around within a world. Google shows off what Cardboard does using space games, Jack White in concert, and a program that lets teachers offer guided field trips. "Cardboard is the gateway drug to this industry," says Craig Dalton, cofounder and CEO of DodoCase, the accessories maker which has printed custom Cardboard viewers for Conan O'Brien and Oscar Mayer. "If the VR–software-developing industry focuses its energy on Cardboard," he says, "there will be a monetizable ecosystem all the way up the food chain to Oculus." *—J.J. McCorvey*

The year in design at GOOGLE



STYLISH NEW FACES FOR WEARABLES

The design studio UsTwo created a range of bold watch faces for Android Wear, Google's operating system for wearables, including models that integrate calendar and weather data, allowing users to glean information at a glance.

A NEW FRAMEWORK FOR GOOGLE APPS

Google's refreshed design language, dubbed Material Design, seeks to unify how its products work across platforms, so people will always be able to intuit the ways the same app will behave on different devices, even on an entirely new one like a car dashboard.

AN INBOX THAT GETS THINGS DONE

Inbox by Gmail overhauls the email experience by using artificial intelligence to predict what's most relevant, combining emails into categories such as Purchases and transforming messages into a to-do list.



Second that emotion
Emotient CEO Denman, photographed in San Diego on July 28, 2015

EMOTIENT

Software that can read a face in the crowd

Human emotions are messy, unpredictable, and often inexplicable. Which makes Emotient's achievements all the more impressive. The San Diego–based startup makes facial-recognition software that can detect minute muscle changes and convert the information into easy-to-read data visualizations that can help companies better understand their consumers' emotional reactions. "It's difficult for many of us to express how we feel," says Emotient president and CEO Ken Denman. "There's a gut instinct that we like or dislike something, but we don't know why—it's an implicit response."

Emotient can be deployed in public places such as amusement parks, shopping malls, and sports stadiums—anywhere with cameras. At a Disney theme park, for example, the technology could find out which attractions are most pleasing or identify where customers are growing frustrated from long lines, leading management to improve the user experience. It's being marketed for use in advertising as well, and researchers are studying its potential in retail, health care, education, and politics. "When you create content, you really have to be good," Denman says. "You have to understand the emotional journey of the consumer."
—Kim Lightbody

Photograph by Justin Maxon

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SQUARESPACE 7

A website builder anyone can use



SquareSpace 7, a revamp of the company's namesake site-creation product, simplifies page building by letting users directly manipulate the layout rather than go through back-end forms to add text and images before previewing their work. It also introduced new photo and calendar options thanks to deals with Getty Images and Google. "We are going to make all these things that were otherwise difficult for you easier," says SquareSpace founder and CEO Anthony Casalena. *—Claire Dodson*



CUE DEEP HEALTH TRACKER

A diagnostics lab in a domino

Our client's vision was to take this complicated science and convert it into something that was meaningful to people," says Scot Herbst, designer of the Cue health monitor. Home health care is a $30 billion (and growing) market, but it hasn't been a hotbed of innovation and design. Cue, an elegant Rubik's Cube–size device, lets consumers test their fertility, inflammation, testosterone, vitamin D, and influenza exposure without stepping foot in a doctor's office. Users collect a small sample of saliva, blood, or mucus with a disposable wand, insert it into the appropriate color-coded cartridge, and receive test results on their smartphone within minutes. From there, Cue suggests improvements for each aspect of users' health. Cue plans to add tests for strep throat, cortisol, and cholesterol—and anything a lab might do today. *—Nikita Richardson*

Photograph by Will Anderson; Illustrations by Stephen Chan

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1. Claim based on average horsepower from Lexus IS line year over year vs. 2016 Lexus IS line. 2. Ratings achieved using the required premium unleaded gasoline with an octane rating of 91 or higher. If premium fuel is not used, performance will decrease. 3. Performance figures are for comparison only and were obtained with prototype vehicles by professional drivers using special safety equipment and procedures. Do not attempt. 4. Claim based on 6.6-second 0-to-60 time of the 2016 Lexus IS 200t vs. 7.7-second 0-to-60 time of the 2015 Lexus IS 250. 5. Base model comparison of 255 horsepower for the 2016 Lexus IS 300 AWD vs. 204 horsepower for the 2015 Lexus IS 250 AWD. ©2015 Lexus.

A friend who makes sure you're okay



The connector
Facebook Safety Check designer Yaniv, photographed in Tel Aviv on July 29, 2015

Photograph by Goran Ljubuncic

Makeup: Michel Edri at Solo Agency

FACEBOOK
SAFETY CHECK

When a disaster strikes, Facebook has naturally become one of the first places people go to check on loved ones. "We [already] see the activity going on," says Idit Yaniv, a Tel Aviv–based product design manager at Facebook, "and we want to enable people to connect more easily during times of need." In the aftermath of Typhoon Ruby in the Philippines last December, Yaniv and her colleagues released Safety Check, which transforms that worried search into a proactive tool that automatically sends a notification to users if they're within range of a natural disaster. Users can then mark themselves as "safe," and the update gets transmitted to their Facebook friends.

Yaniv helped to refine Safety Check's design by traveling to the Philippines following the typhoon. Some Safety Check users were confused by the "Are you okay?" notification because it didn't look anything like Facebook. To make users more comfortable, she added the names and profile pics of other friends who had recently used it. "A simple design can impact people in a tremendous way," she says. Safety Check has since been rolled out for three other natural disasters, including the first Nepal earthquake in April. More than 7 million people used Safety Check to notify over 150 million friends and family members that they were safe. *—JM*



The giver
Facebook Donate designer Eriksson, photographed in Menlo Park, California, on July 23, 2015

FACEBOOK
DONATE

A news feed update worth liking

While following the news of the Ebola crisis in West Africa last November, Facebook product designer Eric Eriksson, along with a handful of coworkers, hacked together a Donate feature: a button atop users' news feeds that enabled them to contribute to relief efforts. "We'd never done anything at this scale in terms of charitable giving," Eriksson says. During the campaign, though, he noticed that many users wouldn't go through with a gift even after clicking on the message. Eriksson's team ironed out the flow, and by the time the Nepal earthquake hit in April, they were ready. Instead of three charities, users were presented with one—International Medical Corps—and the promise that Facebook would match their donation (up to $2 million). These changes reduced the process from five or six steps to just one. By the end of the Nepal campaign, which ran just over a week, more than 760,000 people had donated $16 million.

The revamped Donate product plays upon Facebook's greatest strength—its 1.5 billion connected users—and incorporates a viral element. Users can share a status update when they donate, and that post also contains a DONATE button that friends can click on. "We're scratching the surface of enabling this network to do good in the world," says Eriksson. *—JM*

Photograph by Anastasiia Sapon

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Good design truly is good business. It has the power to transform experiences, improve utility, and spark emotional connections. In the right hands, the multifaceted discipline is an absolute game changer; setting brands apart as it sets them up for success.

Designed for Success, a *Fast Company* and moo.com collaboration, gets inside the minds of entrepreneurs who live and breathe this mantra to find out how the creative, strategic application of design powers their business.



Scott Norton
Cofounder, Sir Kensington's Ketchup

"Most commercial supermarket products speak to broad demographics and are afraid to take risks, whereas Sir Kensington's Ketchup appeals to people's inner rule breaker."



Marawan El-Asfahani
Partner & CEO, Jacknife Inc.

"As a branding firm, we truly collaborate with our clients helping them better connect with people by speaking less like marketers and more like humans—it's just common sense."



ZeShan Malik
Cofounder, Melee Media

"I'm constantly trying to stay on the pulse of new trends in art, live events, and interactivity so I can continue to deliver my clients the best ideas."

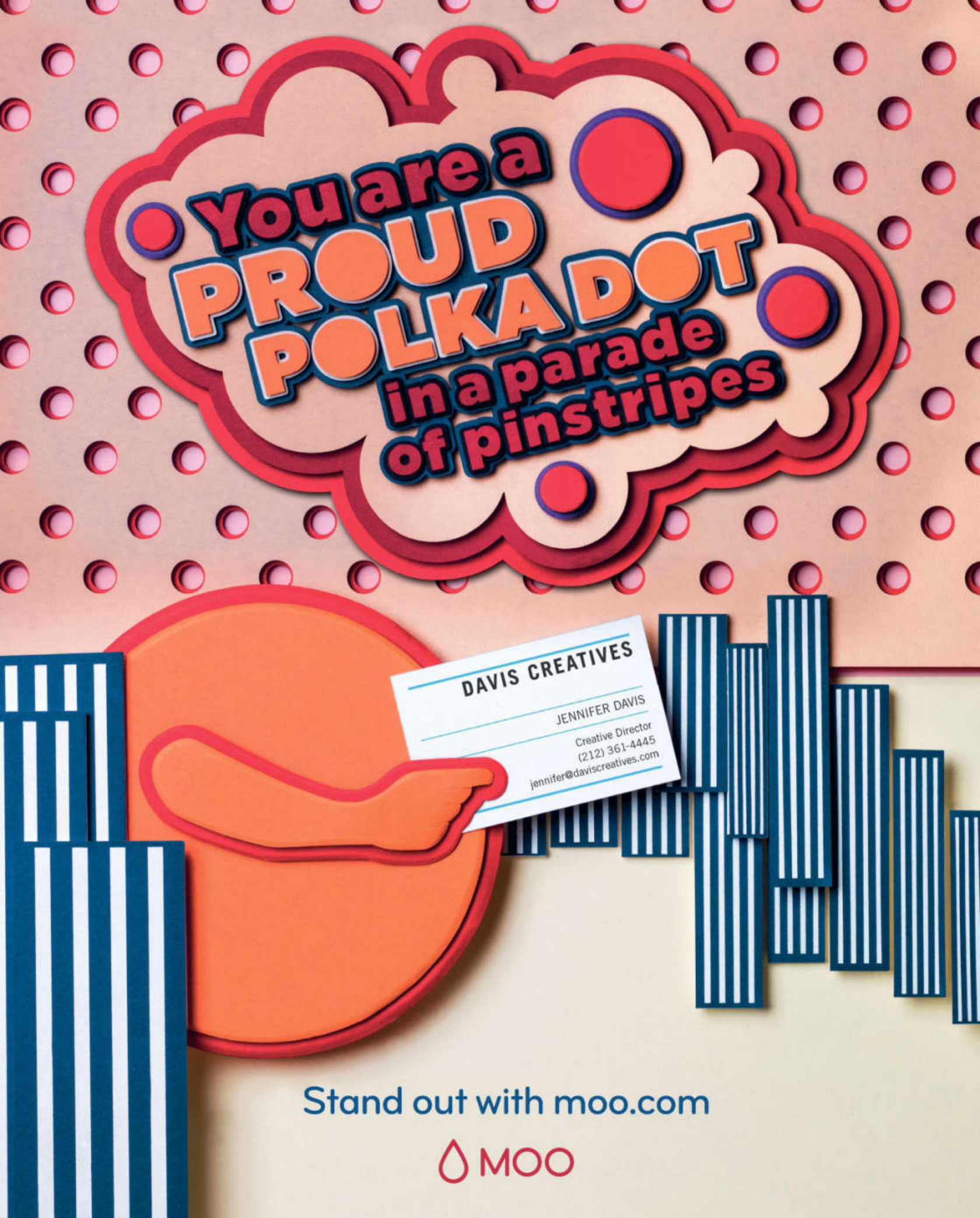


Ayah Bdeir
Founder & CEO of littleBits

littleBits merges the disciplines of interactive art and engineering to create what has been called "the Lego set for the 21st century"—making it fun and easy to construct anything from a remote-control car to an alarm clock.

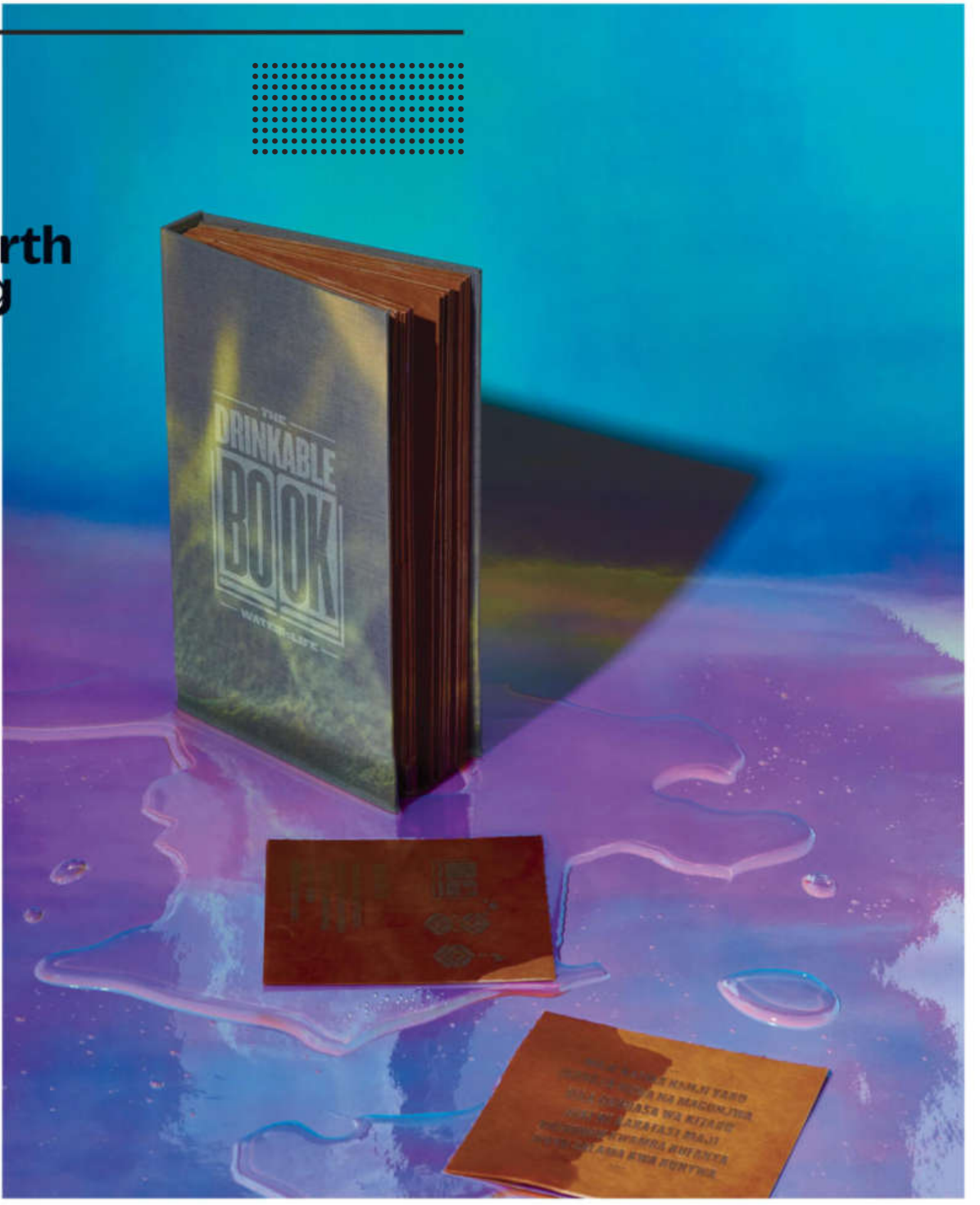
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THE DRINKABLE BOOK

A book worth consuming



An advertising agency, a not-for-profit, and a scientist walk into a bar—and change the future of access to clean water. Theresa Dankovich, a Carnegie Mellon scientist who recently invented a new kind of paper covered in silver nanoparticles that's capable of killing 99.99% of waterborne bacteria, teamed up with Water Is Life and designers at the ad shop DDB Worldwide to package her creation. The Drinkable Book combines Dankovich's paper with a filter tray and purification instructions. Water Is Life is developing the book in a number of languages and intends to distribute it globally to reach the 783 million people who lack reliable access to safe drinking water. Each book boasts enough sheets of the filter paper to provide up to four years of potable water for each user. *—NR*

Coming soon

CINDER SENSING COOKER

A cooktop that's foolproof



All you need for a perfectly cooked steak is a good cut of meat, salt and pepper, and Cinder's kitchen appliance, which features technology that's also used to guide space satellites. The cooker's airtight lid and software algorithms help heat meat (or vegetables or pie filling) to the perfect temperature and hold it there using precision thermometers. "Our goal was to make a connected device that feels like a sous chef is working with you," says CEO Eric Norman. Cinder is set to ship in early 2016. *—CD*

Photograph by Will Anderson



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IBM
U.S. OPEN
SESSIONS

A grand slam of bringing data to life

Every year, IBM collects reams of data from the U.S. Open tennis tournament and churns it into analysis including first-serve percentages, total backhand unforced errors, shot-placement maps, and so forth. Last year, however, IBM's creative team had a different thought: What if we turn that data into music?

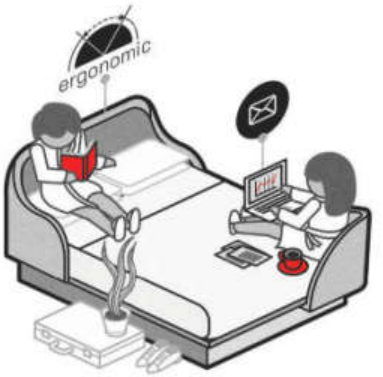
The result was IBM Sessions, a partnership with former LCD Soundsystem frontman James Murphy to create a musical composition out of what was happening on the court. Each data point IBM collected was assigned a musical value and an algorithm took care of the rest: The music changed every time a point was scored. "We wanted to create a really immersive experience that allowed us to use these thousands of data points and IBM technology to create music in real time," says Ann Rubin, VP of branded content and global creative at IBM, whose team worked with Murphy to fine-tune the software. Users could follow IBM Sessions, which also had dynamic visuals accompanying the music, via a special mobile site or live at the Billie Jean King National Tennis Center in New York. The final tally at the end of the tournament: 187 matches, 400 hours of music, one album featuring remixes of Murphy's 12 favorite matches, and 2 million views overall. *—JG*

Photograph by Mads Perch

Coming soon

VIRGIN BED

A desk that you can sleep in



Noticing that few patrons actually used the desks in their rooms, execs at Virgin Group's hotel arm decided to meet business travelers where they more commonly work: the bed. Designers at Rockwell Group augmented the hotel bed with an ergonomic headboard and a cushioned seat at the foot. The Chicago Virgin Hotel, which opened earlier this year, already has the hybrid sleeping–work space, and the company plans to install it in 20 locations by 2025. *—NR*



Trash buster
Slat believes that a single 100 km cleanup structure, deployed for 10 years, will remove 42% of the Great Pacific Garbage Patch, or 70,320,000 kg of garbage.

THE OCEAN CLEANUP

A wave-making fix for sea trash

In 2013, a teenage Dutch student named Boyan Slat came up with an idea to corral the ocean's plastic pileup: What if we could use natural ocean currents to gather bottles and bags inside long, floating barricades? Slat, now 21, decided to try and do it. Referencing how he wants to use the tides to direct trash into his receptacles, Slat says, "Why move through the ocean when the ocean can move through you?" He raised $2.2 million via crowdfunding for a research expedition and founded the Ocean Cleanup. The organization aims to launch its barriers in 2020, with a goal to remove nearly half of the Great Pacific Garbage Patch within 10 years. *—CD*

Michel Porro/Contour by Getty Images (Slat)





The completely redesigned 2015 Edge is here and ready for almost anything, with available features like a front 180-degree camera, enhanced active park assist and Lane-Keeping System. It's comforting to know you have a few surprises of your own. Go to ford.com to find out more.

THE ALL-NEW 2015 EDGE
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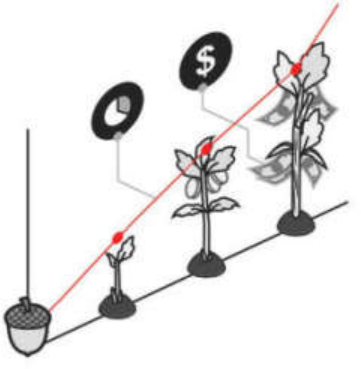
A carry tool you don't have to carry



When Disneyland refused to let Ben Rivera in with his Leatherman multipurpose tool, his frustration bore inspiration. Rivera, Leatherman's president, developed the Tread, a wearable that looks like jewelry rather than a pocket knife but still includes 29 tools (a variety of screwdrivers and wrenches) within its steampunk, stainless-steel aesthetic. Rivera designed his original prototype off the idea of a bicycle chain: interconnected links that are rigid, yet flexible, and most important, adaptable. He even rigged his Apple Watch to his Tread, a hack that may evolve into a product extension. That's just one of the possibilities he envisions, citing niche-focused Treads for photographers and police officers. "Each link," he says, "is a little app for the real world." *—CD*

ACORNS

An app that turns a spare-change jar into a portfolio



Fifty-two percent of Americans don't have any investment in the stock market. Acorns' sleek app helps fledgling investors ease their way in by rounding up everyday purchases and putting the extra money into stocks, real estate, and government bonds, based on a user's age, income, and goals. To promote saving early, users under the age of 24 pay no fees. *—NR*

Photograph by Will Anderson


openforbusiness.slack.com
Square uses Slack, an easy-to-use messaging app that integrates with your existing tools and gathers all your communication in one place. It's teamwork made simpler, more pleasant, and more productive.
slack
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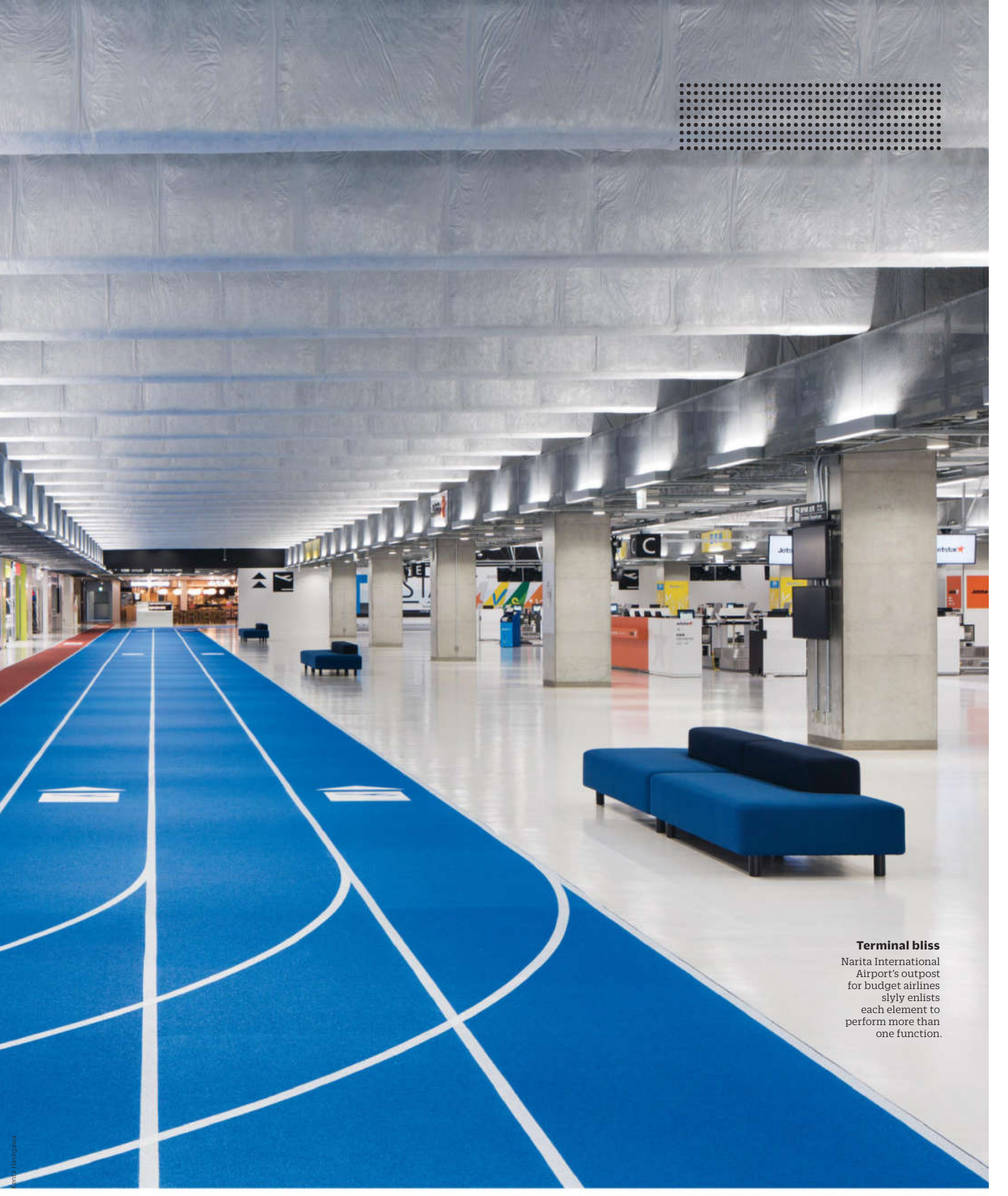
An airport that's the epitome of cheap chic



If you're flying a discount carrier, the low-budget aesthetic usually starts the moment you arrive at the airport. "Limitation is the mother of creativity," says Naoki Ito, chief creative officer at the Japanese firm Party, which collaborated with architects Nikken Sekkei and the retailer Muji to design Narita Airport's Terminal 3 in Tokyo. (Terminal 3 serves the region's low-cost airlines.) Ito's design constraints included a budget of $121 million—just 60% of the resources given to the airport's other two terminals—as well as a 15-minute walk between Terminal 3 and the next terminal. Because of the budget, there could be no expensive moving sidewalks or illuminated signs.

Ito's answer: "Consolidate two or more functionalities into one, and create a space within this compact system," he says. A running track helps replace both the moving sidewalk and the signs. The cushioned surface is easy on the feet and fun to use, and it also directs traffic through the terminal. The blue lane is for departures and an earthy brown is for arrivals. The furniture is comfortable and utilitarian enough to offer space to sit or take a quick nap; the food court uses low-cost wood in community-style tables that maximize space.

The "two into one" design's blend of style and frugality helped the team win over the public. With the 2020 Olympics approaching, construction has amped up in Tokyo, including an expensive, taxpayer-funded stadium that many citizens see as a careless use of resources. Ito wanted the terminal (which is funded by both public and private funds) to respect their wallets. "The [Japanese] people want it used in an efficient way," he says. "They don't want it to be wasted." *—CD*



Terminal bliss
Narita International Airport's outpost for budget airlines slyly enlists each element to perform more than one function.

Kenta Hasegawa

NIKE+
YOUR YEAR

A personalized video to cheer on runners

The idea was simple: recap Nike+ users' 2014 achievements, including how many miles they'd run, how fast, and for how long. Nike had compiled this information from Nike Fuelband users and other data-tracking exercise apps throughout the year. "We could have sent an email, but you'd delete it," says Ben Taylor, an associate planning director at the creative agency AKQA, who worked with Nike to convert this data into something more memorable than a standard message in your inbox. "The numbers alone can't really capture something like finishing a marathon. We wanted to find the magic in the data." Taylor's team hit upon the idea of creating something that felt like a personal short film, combining all that Nike+ data with location and weather information to make 100,000 algorithmically generated animations (created by the French illustrator Mcbess) for the most active Nike+ users. The resulting videos felt unique to each Nike+ user: A runner in Los Angeles might see herself sprint past the Hollywood sign, while a New Yorker got a glimpse of himself jogging through Brooklyn. Each video challenged its recipient to reach a new milestone in 2015, such as completing a marathon. The customization effort paid off: More than 50% of recipients shared the videos on social media. "The more data points you can access, the richer the stories you can tell," Taylor says. "We're very excited to take it to the next level." —*KL*



ZOOM CITY
ARENA LED
BASKETBALL COURT

A basketball court that makes you an all-star



For the NBA All-Star Weekend in New York City, Nike built an experiential shrine to hoops. The full-size basketball court's floor was an LED video display that could replicate being in L.A.'s Staples Center or participating in an outdoor game on New York's legendary West Fourth Street courts. Called Zoom City, it also played videos and interactive tutorials, making it possible for anyone—in theory—to do a layup like LeBron by following diagrammed arrows below their feet. —*KL*



Designed for excellence

In the last two years alone, the Savannah College of Art and Design has amassed an abundance of prestigious awards from many of the world's leading design organizations.

reddot — 12 Red Dot Awards

RSA — 4 Royal Society of Arts Awards

IDSA — 3 Industrial Designers Society of America Awards

International Design Awards — 7 International Design Awards

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Q'WIK 15
John Gray Parker, M.F.A. service design, New Orleans, Louisiana
Philip Caridi, B.F.A. industrial design, Alexandria, Virginia

SCAD The University for Creative Careers
ATLANTA HONG KONG LACOSTE SAVANNAH eLEARNING

TO PARK
OR NOT TO PARK

A parking sign you can actually understand



Park place
Designer Nikki Sylianteng, photographed in Brooklyn on July 30, 2015

Last fall, Los Angeles councilman Paul Krekorian approached his fellow members with a novel idea: He'd recently come across a guerilla project that could completely transform how people in the City of Angels parked—by making it easier for them to avoid parking tickets.

The scheme, called To Park or Not to Park, was created by L.A. native and interactive designer Nikki Sylianteng, who, after suffering one too many citations, decided to rethink the look of most parking signs. She created an easy-to-read grid, along the lines of the kind in a good mobile calendar app, laminated it with packing tape, and put it up outside her bedroom window, with a URL showing where passersby could download the template to make their own signs.

In April 2015, Sylianteng's project went global as Krekorian piloted a project to install more than 100 of her signs in downtown L.A. The attention inspired municipalities in Brisbane, Australia; Vancouver; and Fargo, North Dakota, to explore Sylianteng's project as well. "I've gotten emails saying, 'Are you a sign designer?' and I'm not," says Sylianteng, who now lives in New York. "It's about being more thoughtful about who the person using whatever it is you're making needs." *—NR*

Photograph by Gus Powell

virgin atlantic
Let it fly

BUSINESS IS A
500 MPH
30,000 FT
POND CROSSING
SLIDE TWEAKING
DEEP ZZZING
SMOOTH LANDING
MEETING MAKING
FIRM HANDSHAKING
HEART POUNDING
PITCH NAILING
CONTRACT SIGNING,
CLOUD NINING
CHAMPAGNE TOASTING,
SOUVENIR BUYING
CLUBHOUSE LOUNGING
COCKTAIL SIPPING
HOMEWARD BOUNDING
ADVENTURE.

MAKE IT EPIC



Innovation by Design: the Finalists

To find out who won and for fuller descriptions of all the finalists, go to FastCoDesign.com.

3-D PRINTING

Judges

- **Andrew Dent** Vice president of materials research, Material ConneXion
- **Bre Pettis** Cofounder, MakerBot; founder, Bold Machines
- **Bradford Shellhammer** Founder and CEO, Bezar
- **Janette Sadik-Khan** Commissioner, Bloomberg Associates

Finalists

Building Bytes Design.Lab. Workshop

Chase Me Form Labs

MakerChairs Joris Laarman Lab

MOD-t New Matter

Voxel8 Voxel8

Windform CRP Technology

CITY SOLUTIONS

Judges

- **Denise Cherry** Founder and principal, Studio O+A
- **Nicole Dosso** Director, Skidmore, Owings & Merrill
- **Richard Florida** Author, *Rise of the Creative Class*

Finalists

All Aboard Florida Skidmore, Owings & Merrill

Backyard BI(h)OME Kevin Daly Architects

Invisible New York SITU Studio

Kiezkaufhaus Scholz & Volkmer GmbH

The Lawn on D Sasaki Associates

New Tube London PriestmanGoode

Octave Living Room Tsao & McKown Architects

Radwende Radwende

Responsive Street Furniture Ross Atkin Associates

Sandy Hook Elementary School 2016 Svigals + Partners

Seattle Denny Substation NBBJ

Sky Reflector-Net at Fulton Center James Carpenter Design Associates Grimshaw Architects, Arup

Songpa Micro-Housing SsD

Star Apartments Michael Maltzan Architecture

Starbucks Express Starbucks Coffee Co.

To Park or Not to Park Nikki Sylianteng (Page 106)

Urban Post-Disaster Housing Prototype NYC Emergency Management and the Department of Design and Construction

DATA VISUALIZATION

Judges

- **Andrei Scheinkman** Deputy editor, FiveThirtyEight
- **Moritz Stefaner** Designer
- **Lisa Strausfeld** Principal, InformationArt

Finalists

Blopboard Pentagram

DOMO DOMO

Emotient Analytics Emotient (Page 86)

The House of Clicks Tham & Videgård Arkitekter

Mobility Clever*Franke

Nike+ Your Year AKQA (Page 104)

No Ceilings Fathom Information Design

RAW DensityDesign

Reimagining the instrument clusters in cars UsTwo

Scaled in Miles Fathom Information Design

SciPlay Noticing Tools Local Projects

U.S. Open Sessions IBM, Ogilvy & Mather, and James Murphy (Page 96)

The Viz That Broke the NYPD *New York Daily News* and Tableau

EXPERIENCE

Judges

- **Dan Gardner** Cofounder, Code and Theory
- **Mauro Porcini** SVP and chief design officer, PepsiCo
- **Kevin Young** SVP of product experience, Continuum

Finalists

Cooper Hewitt, Smithsonian Design Museum Local Projects

JetBlue Mint JetBlue

Pullman Biz Playground Mathieu Lehanneur and Accor

Starbucks Reserve Roastery and Tasting Room Starbucks Coffee Co.

Narita Airport Terminal 3 Party (Page 102)

National September 11 Memorial & Museum Thinc Design and Local Projects

Zoom City Arena LED Basketball Court Nike (Page 104)

EXPERIMENTAL

Judges

- **Cynthia Breazeal** Founder, Jibo; professor, MIT Media Lab
- **Matias Duarte** VP of design, Google
- **Mark Rolston** Founder, Argodesign

Finalists

Binaudios Dominic Wilcox

Cord UIs MIT Media Lab

The Future of Automobility Ideo + Solspace

Henri Method

Ikea Concept Kitchen Ideo

Method Money Method

MindRider DuKorp Corp.

Personal Climates MIT Senseable City Lab

Project Underskin NewDealDesign

Purple Artefact

RAM House Space Caviar

Reimagining the instrument clusters in cars UsTwo

Signet Ziba

Six Monkeys Variable

Thaw Sang-won Leigh, MIT Media Lab

FASHION

Judges

- **Amanda Parkes** Chief of technology and research, Manufacture NY
- **Marissa Webb** Creative director and EVP of design, Banana Republic
- **Anouk Wipprecht** Fashion designer

Finalists

Adidas Yeezy 750 Boost Adidas

Dear Kate Nothing Under Yoga Pants Dear Kate

MagZip DNS Designs

Purple Artefact

True Spectrum True&Co.

Wanderers Neri Oxman, MIT Media Lab

Withings Activité Withings

GRAPHIC DESIGN

Judges

- **Bobby Martin** Cofounder, Original Champions of Design
- **Wyatt Mitchell** Apple
- **Rosanne Somerson** President, Rhode Island School of Design

Finalists

Airbnb Brand Evolution DesignStudio and Airbnb (Page 82)

Cornell Tech Identity Sullivan

Discover. typography Hoefler & Co.

IFC Network Branding Gretel

MIT Media Lab Identity Michael Bierut, Pentagram

Mutant Font Africa

Norway's New Banknotes Snøhetta

Obsidian Hoefler & Co.

OfficeUS Identity Natasha Jen, Pentagram

Sound Meets Type Håkon Stensholt

Sweden Sans Söderhavet

HEALTH

Judges

- **Tama Duffy Day**
Health and wellness director, Gensler
- **Paul Litchfield**
VP of advanced concepts, Reebok
- **Leslie Saxon**
Founder and executive director, University of Southern California Center for Body Computing

Finalists

Cedars Sinai, OR 360
Yazdani Studio of CannonDesign

Cur Pain Relief
Cur

The Drinkable Book
DDB New York and Water Is Life
(Page 94)

Embrace Watch
Pearl Studios and Empatica

Juno
Fuseproject

kGoal Smart Kegel Exerciser
Minna Life

Tru Tag
TruTag

MOBILE APPS

Judges

- **Darcy DiNucci**
VP of user experience design, Ammunition
- **Ricky Engelberg**
Experience director of digital sport, Nike
- **Mark Kawano**
Cofounder and CEO, Storehouse

Finalists

Acorns
Acorns
(Page 100)

Android Wear
Google

Android Wear Watch Faces
UsTwo
(Page 85)

Do Mobile Apps
IFTTT

Earth: A Primer
Levity Lab

Hyperlapse
Instagram

Inbox by Gmail
Google
(Page 85)

Kidaptive—Learner Mosaic
Frog Design

LISNR
R/GA and LISNR

Material Design
Google
(Page 85)

NPR One
NPR

Passe-Partout
Pentagram

StoryCorps digital platform
Maya Design

Tworlds—Two Worlds, One Moment
Noodlewerk

PRODUCT DESIGN

Judges

- **Caroline Baumann**
Director, Cooper Hewitt National Design Museum
- **Carl Bass**
CEO, Autodesk
- **Jonas Damon**
Executive creative director, Frog Design

Finalists

Adobe Ink & Slide
Ammunition

Artiphon Instrument 1
Artiphon

Cardboard VR
Google
(Page 84)

The Casper Mattress
Casper

Cinder Sensing Cooker
Palate Home
(Page 94)

Cinetic Big Ball Animal + Allergy
Dyson

Cue Deep Health Tracker
Herbst Produkt
(Page 88)

Eero
Eero

Fine Speaker
Pauline Deltour and Lexon

GoTenna
Pensa

Hackaball
Made by Many

Highfive Videoconferencing System
Whipsaw

The House of Clicks
Tham & Videgård Arkitekter

Humangear GoBites
Lunar

Ikea Jyssen Wireless Charger
Veryday

Janinge
Form Us With Love

Jibo Social Robot
Jibo

Juul Electronic Cigarette
Pax Labs

Leatherman Tread
Leatherman Tool Group
(Page 100)

Lyft Glowstache
Ammunition

MOD-t
New Matter

Navdy
Navdy

Osmo
Tangible Play

Phorm
Tactus Technology with Ammunition and Alloy

PowerGear2 Pruning Tools
Fiskars

Public Office Landscape
Fuseproject

Sabi Space
Sabi and MAP Project Office

Skully AR-1
Skully

Slide-In Induction Range with Virtual Flame
Samsung

Solo
3D Robotics

Stratos Card
Herbst Produkt

Surface Pro 3
Microsoft

Swash System Launch
Go Unlimited

TMA-2 Modular Headphone System
AIAIAI and Kilo Design

The Ultimate Urban Utility Bike: Denny
Teague

Vanmoof x Spinlister
Vanmoof and Spinlister

Virgin Hotels—Lounge Bed
Virgin Hotels and Rockwell Group
(Page 98)

SMART HOME

Judges

- **Hiroshi Ishii**
Professor, MIT Media Lab
- **Ben Kaufman**
Founder, Quirky

Finalists

Beep Wireless Home Audio
NewDealDesign

Canary
Canary

Edyn
Fuseproject

Leeo Nightlight
Ammunition

Smart Vent
Keen Home

Sproutling Baby Monitor
NewDealDesign

SOCIAL GOOD

Judges

- **Edgar Arceneaux**
Cofounder, Watts House Project
- **Sandy Chilewich**
Founder, Chilewich
- **Paula Scher**
Partner, Pentagram
- **Lisa Williams**
Chief product officer, Patagonia

Finalists

Advanced Ordinance Teaching Materials
Golden West Humanitarian Foundation

Asili
Ideo and American Refugee Committee

Design Kit
Ideo

GHESKIO Cholera Treatment Center
MASS Design Group

Humanitarian Data Exchange
Frog Design and the UN Office for the Coordination of Humanitarian Affairs

Increasing the Immediate Value of Microinsurance for the Poor
Continuum

New Ebola Protective Suit
Jhpiego; the Johns Hopkins University Center for Bioengineering, Innovation, and Design; and Clinvue

Noticing Tools
Local Projects

The Ocean Cleanup
The Ocean Cleanup
(Page 98)

Outernet
Code and Theory

Safety Check and Donations
Facebook
(Page 90)

STUDENTS

Judges

- **Nadine Chahine**
Type designer, Monotype
- **John Edson**
President, Lunar
- **D'Wayne Edwards**
Founder, Pensole Footwear Design Academy
- **Alice Twemlow**
Chair, School of Visual Art Departments of Design and Research

Finalists

Cord UIs
MIT Media Lab

FOLD
MIT Media Lab

Link
Bezalel Academy of Arts and Design

The Museum of Stolen Art
NYU

A New Musical Instrument
Monash University

Soarigami
Soarigami and the School of Architecture, University of Texas at Arlington

The Solar Decathlon
RISD

Tip Yourself
Lucky Penny, California College of the Arts

The Touch Technology
University of the Arts Berlin

WEB DESIGN

Judges

- **Irene Au**
Design partner, Khosla Ventures
- **Joe Stewart**
Cofounder, Work & Co.
- **Cap Watkins**
VP of design, BuzzFeed
- **Julie Zhuo**
Product design director, Facebook

Finalists

Airbnb Brand Evolution
Airbnb
(Page 82)

Bloomberg Politics
Code and Theory

Coda
Method

Conversion Lift
Facebook

Emergent
Normative

Flipboard
Flipboard

The Grid
The Grid

IBM Chef Watson with *Bon Appétit*
IBM

Slack
Slack
(Page 80)

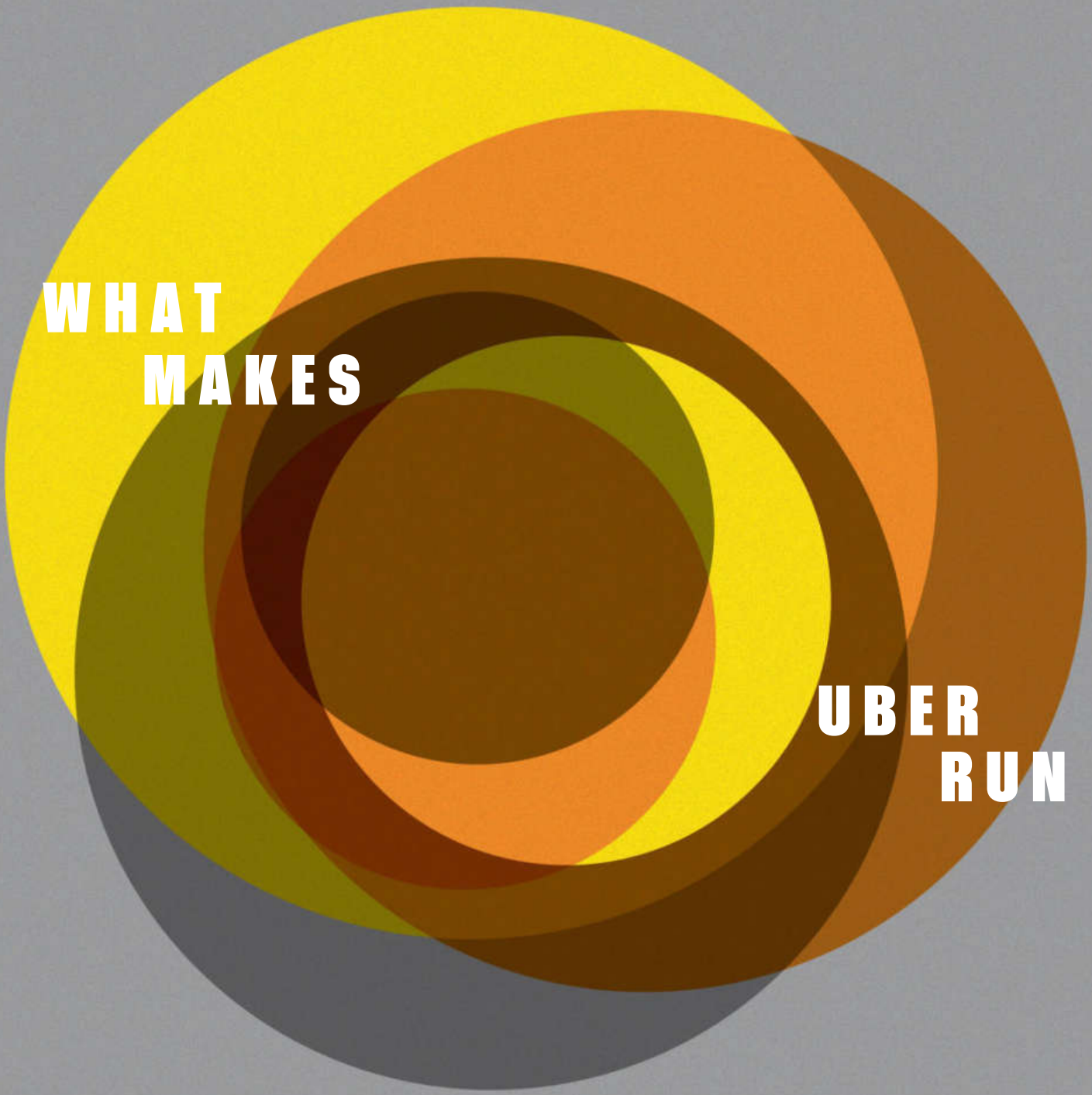
SquareSpace 7
SquareSpace
(Page 88)

U.S. Open Sessions
IBM, Ogilvy & Mather, and James Murphy
(Page 96)

Virgin America 3.0
Work & Co.

Wallace Music Video
Collins

Judges recused themselves from deliberation on entries from companies where they are also employed.



WHAT MAKES UBER RUN

The transportation service has become a global brand, an economic force, and a cultural lightning rod. Here's how and why the architect of all this disruption, CEO Travis Kalanick, plans to keep on confounding expectations.

By Max Chafkin
Illustration by Tavis Coburn



Jordan Kretchmer remembers what Travis Kalanick was like before Uber was Uber.

Kretchmer was a 25-year-old college drop-out with a lot of ideas, and Kalanick had even more. He was in his early thirties, an engineer who talked like a sales guy, smart as hell and high on life. He wore a cowboy hat and referred to himself as the Wolf, after the cold-blooded, coolly rational fixer played by Harvey Keitel in *Pulp Fiction*. He was tireless—always on the move, always thirsty.

They met in 2009 at South by Southwest and bonded at an all-night "jam session" about the future of the Internet. That night in Austin was a sort of satellite version of the 'round-the-clock ideas salon Kalanick routinely held at his three-bedroom house in San Francisco. These gatherings were full of young people like Kretchmer who had come up through the wreckage of the first dotcom bust, before jobs in tech were thrown around like free T-shirts at a launch party, before venture capitalists regularly talked about startups as if they were mythical creatures. They were entrepreneurs who knew about hustle, who saw opportunity even in the muck of a desperate economy and were going to take advantage. This is what drew them to Kalanick, and vice versa.

Although Kalanick had been a startup guy since high school, he was a grinder, not a mogul. He had made enough on his last one,



Grooming: Amy Lawson at Artist United

Photographs by ioulex

TRAVIS KALANICK

CEO

30,000: New Yorkers who sign up for Uber each week. "If you can predict where demand is going to be and you can get the supply to match to that," Kalanick says, "that's a big freakin' deal."

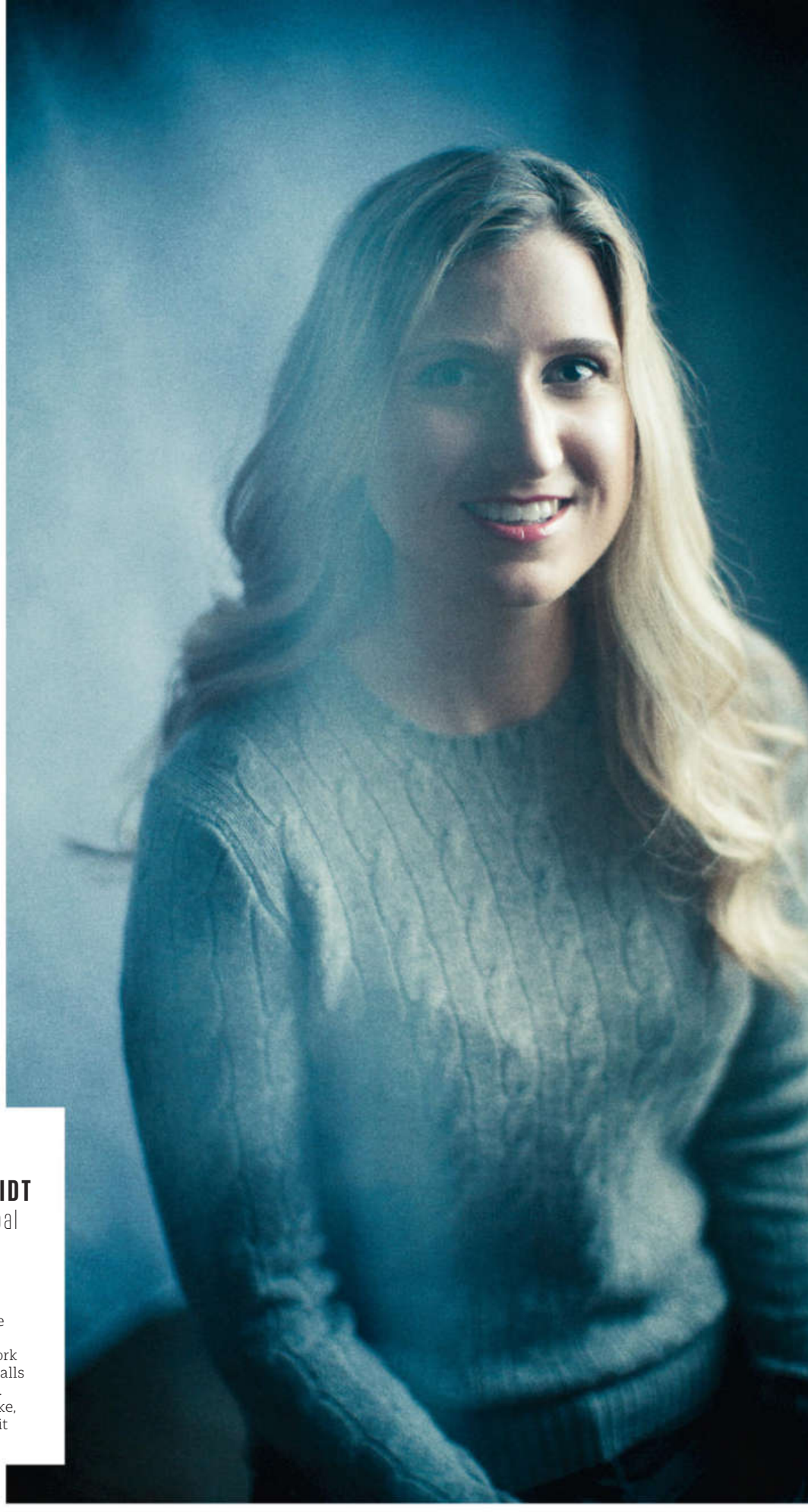
RedSwoosh, to buy a house and do a bit of angel investing. Uber, the on-demand transportation app that he cofounded with Garrett Camp in 2009, was still more or less a toy, a personal limo service for the founders and their friends in San Francisco. When Camp, who'd recently bought back his old company StumbleUpon, asked Kalanick to run Uber full-time, Kalanick said no. Uber was "supercrazy freakin' small," Kalanick tells me when we meet in July, the first time he had given an in-depth interview this year. "I was not ready to get in the game and give 100% or 150%," he says.

Back in those days, if Kalanick liked you, he'd invest in your company, and if he thought your idea was big enough, he'd show up at your office one or two days a week and work for free. Kretchmer hadn't screwed up the courage to pitch Kalanick that night in Austin, but he met Kalanick later that year to pitch him ideas. The one he was most excited about was called Tweetbios, and it basically gave Twitter users an expanded home page.

"That's a small-time idea," Kalanick told Kretchmer. "Small-time, man."

Kretchmer pushed back. "It pissed me off," he recalls. "I had users. It was growing. And I'd built the damn thing."

Kretchmer stuck around the Jam Pad, as Kalanick and his crew referred to his home, where sometimes as many as 15 entrepreneurs at a time would debate business ideas as well as drink his beer, eat his food, play his Nintendo Wii, and stay the night if they wanted. Kretchmer spent the next three hours arguing with Kalanick until he'd settled on a Travis-approved big idea. Kretchmer went to work on the product,



AUSTIN GEIDT
Head of global expansion and process

59: Number of countries where Uber operates. "'Oh, it won't work here,'" Geidt recalls skeptics saying. "We were just like, 'All right, let's hit the gas.'"

"If you looked at everything he's done," says a friend, "I don't think there was another human who was more destined to build Uber."

social media software for publishers and brands, and when Kalanick thought it had progressed enough, he made 45 introductions to other angel investors in less than a week and agreed to invest in the company himself. The startup, now called Livefyre, has customers such as News Corp and Coca-Cola and has raised $72 million in funding. "I got every ounce of value out of that relationship," Kretchmer says.

I heard something similar from Ade Olonoh, the founder of another Kalanick portfolio company. "I'd send Travis an email asking, 'What do you think about this job posting?' and he'd send a page or two back, completely rewritten," Olonoh says. "I know him as somebody really smart and driven and hungry and also very generous."

When I first started hearing these stories, I was surprised, mostly because they seemed at odds with the portrait of Travis Kalanick that has emerged since Uber launched in 2010. Peter Thiel, the Silicon Valley investor, has called Uber "the most ethically challenged company in Silicon Valley," and the journalist and entrepreneur John Battelle has suggested that everyone in the tech industry is "worried about the sheer expression of capitalistic force that the company represents." Those, it turns out, are some of the more circumspect critiques. The CEO of Uber has been routinely described as a callous and ruthless capitalist, the kind of guy who jacks up prices during natural disasters, who is so fond of brotastic aphorisms that *Late Night*'s Seth Meyers once joked, "Are you a man, or did they just spray Axe body spray into a suit until it became sentient?"

"The caricature you see of Travis does not come from a place that's false," Kretchmer says of his longtime friend. "He is an incredibly aggressive person." But, he adds, as if to reconcile the caricature with the man, "he's building one of the most important companies of all time."

About that last point there is little room for debate. In five years, Uber, which dispatches low-cost taxis and limousines operated by independent drivers, is likely the fastest-growing startup in history. It has more than 1 million active drivers—meaning they did at least one trip in the past week—operating in 330 cities (as of mid-August) and a valuation of $51 billion, which is roughly equivalent to the market capitalization of General Motors. It is a global phenomenon that is redesigning urbanites' relationship with the world around them, transforming their smartphones into control pads for their harried lives. Uber—the first company since Google with a service so popular that its name is in regular use as both a noun and a verb—has spawned an entire category of business known as the one-tap economy: Millions of people now routinely open an app to enlist a distributed workforce to deliver groceries, hot meals, and their clean laundry on demand.

But no other one-tap-economy company has changed society like Uber has. The availability of cheap and reliable transportation has helped spur a real estate surge in San Francisco and a nightlife boom in downtown Los Angeles while also (at least according to some studies) reducing drunk driving. Uber's classification of its drivers as independent contractors has sparked a national conversation about the changing nature of employment and has made Uber a litmus test on jobs for the 2016 presidential candidates. Elsewhere, Uber has been seen as a stand-in for the excesses of global capitalism, prompting violent protests in Paris and Mexico City.

All of this influence has come at the price of Kalanick's reputation. The 39-year-old has been presented in an almost cartoonish light, coming off as either a Randian Superman, a Snidely Whiplash–style mustache-twirling villain, or both. And yet Kalanick has wooed some of the most august financiers in the world to give him, essentially, a blank check. Key staff members from some of the world's best-run organizations, including Facebook's head of security, President

UBER'S BIG BET



UBERPOOL

This service lets riders heading the same way share an Uber and save. CEO Travis Kalanick believes that UberPool "has the potential to be as affordable as taking a subway, or a bus, or other means of transportation."

4.7 million
Estimate of miles saved in June 2015 from all UberPool rides in New York, San Francisco, Los Angeles, Austin, and Paris

50
Percentage of New York taxi trips that would be saved if users were willing to wait up to five minutes to be paired with another passenger

820
Metric tons of carbon dioxide saved from those shared rides

365,000
Number of UberPool cars that could serve the same number of people and trips that those 1.95 million private cars do

1.95 million
Number of cars in New York

Sources: Uber; "Quantifying the benefits of vehicle pooling with shareability networks," Senseable City Laboratory, Massachusetts Institute of Technology, September 2014; U.S. Energy Information Administration

"What Travis infuses in the company is that the best ideas win," says Uber's CTO. "You're supposed to only be loyal to the idea."

Barack Obama's campaign manager, and a good-size chunk of Carnegie Mellon's driverless-car research division, have gone to work for him.

I spent five months interviewing dozens of Kalanick's current and former associates—investors, employees, coworkers, friends—and, of course, the man himself, trying to square the Kalanick they know with the avatar for Silicon Valley disruption. Uber and Kalanick's next-step plans are shocking to contemplate: conquering the world's biggest and toughest-to-crack markets in India and China; transforming Uber from "everyone's private driver" into a carpooling service; and then further reinventing itself—and how the world's cities operate—by introducing a fleet of autonomous vehicles. If you want to get your head around Uber's wild growth, and its even wilder potential, you have to get to know its wildly ambitious, ever-restless CEO.

If Uber is the apotheosis of the current technology boom, its roots date to the first dotcom frenzy, when Kalanick was an ambitious 21-year-old computer engineering student at the University of California, Los Angeles. In 1998, with a few months to go before graduation, he dropped out to join the founding team of Scour, a proto-Napster. Kalanick ran product, and because he was also the least geeky member of the group, his friends also put him in charge of business development and marketing.

Kalanick, a natural salesman who sold knives door-to-door as a high school student one summer, helped bring in investment from Michael Ovitz, cofounder of the talent agency CAA, and Ron Burkle, the supermarket magnate. Ovitz, among the most feared Hollywood players at the time, gave Kalanick a crash course in hardball business tactics. Not only did he insist on an onerous 51% share of the startup for $4 million from him and Burkle, he sued Scour as a negotiating tactic when the company looked for other investors. "In some way, L.A. respects the young guy that's out there just trying to make it happen, but in some ways,



THUAN PHAM
CTO

30: New engineers hired each week, in pursuit of his goal of hiring 1,000 in 2015. "If we grew at half the speed we're growing, it'd be like a vacation," says Pham.



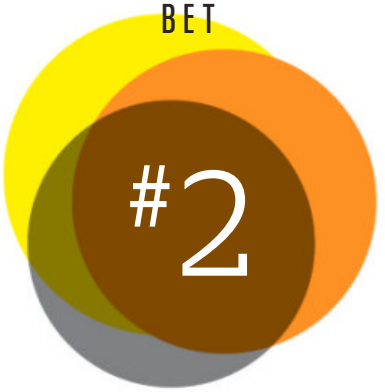
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MOBILIZING YOUR WORLD™

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UBER'S BIG BET



CHINA AND INDIA

"To put it frankly, China represents one of the largest untapped opportunities for Uber, potentially larger than the U.S.," Kalanick wrote investors in a letter this spring. The same goes for India, where, befitting Uber's hyperlocalized strategy, it has launched auto rickshaws, cash payments, and an SOS safety button for riders.

80

Number of Chinese metropolitan areas with more than 5 million residents (there are nine in the United States)

479x

Number of trips Chengdu residents took in the first nine months of Uber's availability compared to New York's first nine months

50

Number of Chinese cities Uber will operate in by mid-2016

63,000

Number of drivers in India who have given their first Uber trip, January to August 2015

5

Number of the top 10 Uber cities in the world that are located in China as of August 2015, up from four in June

1 million

Trips-per-day goal for India by early 2016

Sources: *Financial Times*; Uber

2 billion

U.S. dollars Uber will spend in the year ahead to fuel its expansion into China and India—$1 billion for each market

Each Uber market operates as its own startup. "Travis wanted people who embedded in the fabric of the city," says its East Coast chief.

they disrespect that too," says Kalanick, who'd grown up middle class in Los Angeles's San Fernando Valley, close enough to people like Ovitz to want what they had and also to hate them for it.

"[Kalanick] was seen as a prodigy," says Angelo Sotira, another young entrepreneur who'd sold a company, DMusic, to Ovitz, and who became close with Kalanick. But being under Ovitz's wing exposed Kalanick to the worst of late-1990s management wisdom. Executives at Ovitz's companies would routinely hand out copies of Sun Tzu's *The Art of War,* using the book and others like it to teach lessons. If people struggled, personally or professionally, Sotira recalls, they were told that it was because "you're a Peter and not a Howard"—that is to say, a weak-willed conformist, like Peter Keating in Ayn Rand's *The Fountainhead,* rather than its individualistic hero, Howard Roark. "You can imagine how fucked up that is," says Sotira. "When you're really young, you think that's gospel."

Scour grew to have millions of users largely because it offered movies as well as music, including bootleg copies of then-current theatrical releases *Gladiator* and *The Perfect Storm*. Inevitably, the company was served with a lawsuit from nearly every major record company and movie studio. The damages, $100,000 per file, added up to as much as $250 billion. It was, as Kalanick has noted, roughly equivalent to the GDP of Sweden.

The lawsuit put Ovitz in an awkward position as the backer of the very thing that many in his professional circle were trying to sue out of existence. He declined to fund the company further, and the studios suing Scour informed any potential investors that they'd risk lawsuits if they helped Kalanick and his friends. Scour was forced to file for Chapter 11 bankruptcy protection. When Kalanick declined to go away quietly, as he recalled in a 2011 interview, Ovitz responded by sending an associate to approach Kalanick at a public event where he intimated that if Scour did anything to hurt Ovitz's reputation, the consequences would be dire. "Like, 'There's an alley in the back,'" Kalanick said, paraphrasing what he saw as a threat. "'If you fuck this up, you're going to get very familiar with it.'" Ovitz has denied that a threat was made, and today both men refuse to go into detail about the incident.

These scars still sting. Kalanick tells me that for years he had trouble watching movies without becoming physically ill when the studio logos would appear in the opening credits. "You learn quick in that business how deals are done and not done, and how you can get run over," he says. "You learn a lot about that."

Kalanick rebounded by starting "a revenge business," as he put it to an audience at FailCon, the startup conference where founders tell stories of their past failures. "The idea was to take those 33 litigants that sued me and turn them into customers. So now those dudes who are suing me are paying me." Kalanick intended to transform Scour's consumer-file-sharing technology into an enterprise software product, RedSwoosh, that would make it cheaper for media companies to deliver big video files on the web.

Like many revenge plans, it sounded better than it worked. Bandwidth prices fell rapidly beginning in the early 2000s, and the dotcom bust meant there was suddenly less enthusiasm for big investments in streaming video. RedSwoosh shriveled to just Kalanick and one other engineer. Kalanick moved in with his parents and scrambled to prove he was right despite continually being on the verge of insolvency. At one point in 2005, he seemed close to a major deal, but it fell apart when the website FuckedCompany carried news that his only remaining engineer had defected. "We thought he was crazy to keep going," says Dan Rodrigues, who had been Scour's CEO. But, he adds, "we all believed that if anybody could do it, Travis could." Through little else but the sheer force of his personality, he landed an investor, Mark Cuban; rebuilt a team; signed up a real client in satellite TV provider EchoStar; and, finally, in 2007 sold the company to his much larger rival, Akamai, for $23 million.

It had been a hard six years. "When you're in the dark, your prism for everything around you is, 'could this help the company?'" Kalanick explains. "And with your friends, you have to call favors from them, which is fine. But when you don't have many favors to give and there's enough failure stacking on top of failure, you get in this phase of loneliness." ("That meant not getting any girls, that's for sure," is how he once described it to a Chicago entrepreneurial conference.)

"Why didn't you give up?" I ask.



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PAIGE LEWIS
Driver

1 million: Number of active Uber drivers worldwide. "I'll drive in the morning, go to a lunch meeting, and then go drive some more," says Lewis, a singer-songwriter who also happens to drive for Uber in Los Angeles.

"You can't control who you fall in love with," Kalanick says. "She"—meaning the company—"was an abusive partner."

Kalanick came away from the experience with a profound sense of relief and also a bit of a problem with authority. One evening, he was arrested after getting into a confrontation with a nightclub bouncer who'd asked him to step away from the club. (Kalanick refused, citing that the sidewalk was public space.) Another time, when Kalanick had flown the seven-person RedSwoosh staff to Tulum, Mexico, for a work retreat, he got into it with a cab driver whom he believed was attempting to overcharge him. The dispute escalated, the driver reputedly tried to lock the doors, and Kalanick rolled out of the moving cab. (Writing about the incident on his Formspring homepage in 2010, Kalanick struck a philosophical tone, declaring his actions "wholly justified for anybody who values their physical freedom, and who may be scared of somebody who attempts to appropriate taxi rents through such physical detainment.") "Thinking back, it was amazing that happened," says Tom Jacobs, who was a RedSwoosh engineer. "This guy was going to disrupt the taxi industry."

"We're gonna head to Travis's house."

It was Austin Geidt's first day at a tiny startup called Ubercab. She'd landed the job shortly after graduating from the University of California, Berkeley, in 2010. The company then consisted of four employees in a 10-by-10-foot cubicle. Geidt, an intense 25-year-old with long blond hair and a powerful speaking voice, was supposed to be a marketing intern, but she spent most of her first day handling customer service requests. Ubercab's app had been built quickly by a team of freelance programmers hired by cofounders Kalanick and Camp, and as a consequence it was full of bugs that would sometimes send all the Uber cars in San Francisco to the same place. Around 3 p.m., Ubercab's CEO Ryan Graves, who'd gotten the job when he sent a cold Twitter message to Kalanick, announced that the entire team would be repairing to the Jam Pad.

"Who's Travis?" Geidt asked.

"He's pretty important for us to know," Graves responded.

A few minutes later they were in Kalanick's living room along with a few Jam Pad regulars. The meeting was only to decide the future of the tiny startup.

"What kind of brand do we want to be?" Kalanick asked.

A debate ensued that would last until past midnight. One person argued that Uber should focus on luxury. "We're gonna do airplanes and helicopters. It's luxury all day, all night." Somebody suggested that Uber could advertise the service with images of attractive women in front of nightclubs.



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"I didn't even know what a libertarian was," Kalanick says. "But it just sort of gets repeated enough times that it becomes real."

Kalanick bristled. He was beginning to see Uber not as a "supercrazy freakin' small" premium product, but as a wild math experiment—the kind that a guy who once told a conference audience "I really love numbers" and who referred to himself as "*Rain Man*–analytical" could get excited about. In the early days, Camp and Kalanick assumed that they could disrupt the high-end limousine business by replacing dispatch services with an app. What they did not appreciate initially was the effect that low prices would have on the service. When Uber would have, say, three cars prowling around San Francisco, riders had to wait 20 minutes for a lift; but on weekend evenings, when 15 or 20 cars might be on the streets, wait times plummeted. In other words, as Uber got busier, it got better. Drivers made more money and passengers were happier. "I started to see how math moved the needle," he says. "Things clicked in my mind about how this could scale."

The thing to do, Kalanick argued, was to make the service a low-cost accessible luxury. "If Uber is lower-priced, then more people will want it," he explains. "And if more people want it and can afford it, then you have more cars on the road. And if you have more cars on the road, then your pickup times are lower, your reliability is better. The lower-cost product ends up being more luxurious than the high-end one." Kalanick had been resisting Camp's overtures to become CEO, but it was this insight that got him excited: Uber could be huge.

All that struggle and setback from his first two startups set up Kalanick almost perfectly for what was to come. "If you looked at everything he's done, I don't think there was another human who was more destined to build Uber," says Angelo Sotira. "You had peer-to-peer networks, aggressive dealings, large lawsuits."

The first battle came on the very day Uber's board formally named him CEO in late 2010. After the meeting, Graves, who became Uber's head of global operations, showed Kalanick a text he'd just received from Geidt: "FYI: people came looking for you with a clipboard with your face on it."

The visitors were process servers: Ubercab had been issued a cease-and-desist order by the city of San Francisco, which accused the startup of operating as an unlicensed taxi company. Uber's executives faced fines of $5,000 per ride and 90 days in jail for every day they stayed in business. This wasn't going to add up to the GDP of Sweden, but it would kill the company nonetheless.

Kalanick, the Wolf, didn't flinch. He kept the cars rolling, dropped "cab" from the company name, and scheduled a meeting with the city's Municipal Transportation Agency to explain his position that Uber was not a taxi company but rather a technology service for independent drivers.

"Did Ubercab just crash and burn?" TechCrunch bleated when news leaked from anonymous taxi-industry officials who were apparently attempting to pressure Kalanick to make further concessions, or perhaps shut down. Instead, the opposite happened, as San Francisco's libertarian techies jumped to the company's defense. "Our sign-ups went through the roof," Graves says. "These debates attract a lot of attention."

Kalanick responded to Uber's new, controversial status by amping things up. He'd attended President Obama's first inauguration—and to this day is an avowed supporter of Obamacare—but to support Uber's growth, he took up the mantle of libertarian firebrand. He changed his Twitter avatar to the cover of Rand's *The Fountainhead*. In a *Washington Post* article he not only called *The Fountainhead* "one of my favorite books," but he also brought up *Atlas Shrugged*, suggesting that the regulatory hellscape conjured by Rand bore an "uncanny resemblance" to what Uber faced. When critics attacked Uber's so-called surge pricing policy, a system akin to the scheme used by airlines and hotels to raise prices when demand is high, the CEO who'd been fanatical about lowering prices began publicly mocking customers who complained. "I like pissing people off," he said in one interview. When asked about competitors, he said, "If you're sleeping, I'm gonna kick your ass."

Kalanick looked like an irrepressible jerk to many outside the company, but he was dynamite with the financial press, who portrayed him as the ultimate insurgent ("Silicon Valley's rebel hero," as *Fortune* put it). Venture capitalists fell hard for Kalanick, too. "Any time you're disrupting an industry, people are going to try to take you down," says Bill Maris, the managing partner of Google Ventures. Maris says he started trying to invest in Uber as early as 2011. When he finally got his shot, in the summer of 2013, he gave Kalanick what amounted to a blank term sheet and

UBER'S BIG BET



DRIVERLESS CARS

Although autonomous vehicles represent Uber's longest-term bet, research studies reveal that their potential to transform both Uber and our reliance on personal automobiles is profound. "When there's no other dude in the car, the cost of taking an Uber anywhere becomes cheaper than owning a vehicle," Kalanick said at a conference last year. "And then car ownership goes away."

8.5 to 10

The number of traditional cars that each shared self-driving car can replace while still getting people where they need to go without long wait times for a ride

$1.60

Cost per mile to own, operate, and park a personal car

$0.41

Cost per mile to use a shared self-driving car service

$0.15

Cost per mile to use a shared self-driving car service using one- to two-occupant vehicles

65

Percent fewer cars that are on the roads at peak hours in a city that has shared self-driving cars plus mass transit

23

Percent fewer cars that are on the roads at peak hours in a city that has shared self-driving cars but no mass transit

Sources: "Urban Mobility System Upgrade," International Transport Forum, 2015; "Travel and Environmental Implications of a Shared Automated Fleet, with Varying Levels of Dynamic Ridesharing," University of Texas at Austin, July 2015



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told him to name his price. "What's it going to take to get this deal off the table?" he asked.

Kalanick wanted more than $250 million at a valuation of a little less than $4 billion, a huge figure for a three-year-old company. Maris agreed to the deal on the spot.

On the fourth floor of Uber's San Francisco headquarters, there is a two-foot-wide walking track, delineated by a stenciled pattern of the San Francisco city grid, running around the perimeter of the open-plan office. It's a quarter-mile long, and it's where you'll find Kalanick when his mind is in motion, which is to say pretty much all the time. In a typical week, he does 40 miles, or about 160 laps. "That's just how I think," he says, compulsively screwing and unscrewing a bottle of iced tea that he finished half an hour earlier.

Kalanick still seems, to borrow one of his favorite words, "fierce," but there is also something slightly cowed about him these days. Maybe it's his gray beard, or the way his shoulders slump when he sits, or how his hands seem to shake as he talks. He appears to be making an effort to smile as he meets me in Uber's main conference room, which is known as the War Room. He'd been hesitant to speak with me—hurt and angry, his friends tell me, by the barrage of negative press that has presented Uber as a malignant force. "I'm okay being seen for who we are, but it's not clear to me that's always what people have written," he says, almost meekly. "We'd prefer to just be helping people get from point A to point B, but when the company starts to succeed, in a city, or in a country, or around the world, you start to get brought into more and more of these political debates."

Kalanick started the conversation by diving into Uber's five "brand pillars"—grounded, populist, inspiring, highly evolved, and elevated—but he'd only named two before getting sidetracked, and didn't complete the set until I reminded him about it 90 minutes into the interview. Kalanick seemed to light up most when he learned that I was, like him, a former high school track runner—he asked me my best time for the mile and deemed it "strong." When I brought up the question of Ayn Rand, Kalanick denied adamantly that he had any particular affinity for the books. "I didn't even know what a libertarian was," he says. "But it just sort of gets repeated enough times that it becomes real."

This new, subdued Travis Kalanick who claims he'd never heard of a libertarian seemed to me a significant overcorrection from the badass antigovernment crusader he has played for the past few years—and also just one sliver of his actual personality. That in itself is telling. Kalanick is not the kind of person who clings to beliefs, or even a fixed sense of himself. "He has an inner circle who he opens up to, and then an outward personality and image he projects of a hard-charging disrupter who takes no prisoners," says a longtime friend. That duality, the friend says, "is part of why he's been successful." According to friends and colleagues, the only ideology Kalanick subscribes to is contrarianism. "He really thrives when he can subvert the norm," says someone who has known him for more than a decade. Another coworker tells me that Kalanick likes "poking conventional wisdom in the eye." Kalanick's natural state, it turns out, is debate. When Uber's CTO Thuan Pham, then a VP at VMware, was interviewing for the job in late 2012, Kalanick called him every day for two weeks to quiz him on recruiting or how best to manage engineers. In all, they spent 30 hours talking. "We'd just hammer each other," recalls Pham, who came to the United States in 1980 as part of the exodus of Vietnamese "boat people," got into MIT, and eventually found his way to Silicon Valley. Kalanick, Pham says effusively, encourages his employees to disagree. "What Travis infuses in the company is that the best ideas win," he says. "You have to be willing to step on toes to make sure the idea is heard, and you're supposed to only be loyal to the idea, to the truth."

"Part of being an entrepreneur," Kalanick says, "is going to places that go against the conventional wisdom."

I witness this myself when Kalanick and I discuss China, one of his current obsessions and a place where his ideological flexibility has been an asset. "It's just different than everywhere else," he says, referring to Uber's recent expansion into the country. "And, so, you can't take your pattern or your model for other places and take that to China. You just can't. You have to do it different." Kalanick has made numerous trips to the country to try to understand the quirks of Chinese transportation systems and its brand of government bureaucracy.

Some Silicon Valley founders pride themselves on being visionaries; Kalanick exults in an ability to read the data, revise, and adapt, likening running Uber to driving a car without a clear destination in sight. "You're going down the highway, and it's a bit foggy," he says. "You've got to keep your eyes on the road and your hand on the steering wheel. You can only see so far ahead. But if you keep solving interesting problems, you get somewhere you didn't expect." I found this admission refreshing in light of the absolute certainty that most CEOs project. It also felt like the most honest thing that Kalanick said during our entire interview, and the only time he really broke character.

Kalanick has brought this kind of dynamic thinking to bear in every market Uber has entered, adjusting prices and product offerings, and, at times, molding his personality to fit a given city or business opportunity. When the company launched in New York in early 2011, Kalanick's announcement struck a no-nonsense tone. "The folks who rock Uber value their time, they appreciate nice things with a taste of luxury, and loathe inefficiency," he wrote. A few months later, in crunchy, geeky Seattle, Kalanick sought to paint the service as utilitarian: "A big question I get here in Seattle is how we're going to get over the whole 'ewwww, you showed up in a Town Car?' Well, this isn't your father's black-car service." And in December 2011, in Washington, D.C., he touted the service's "populist" bona fides. "These big-time lobbyists, politicos, and government officials can afford their own private driver and maybe don't need Uber, but their staff definitely aren't allowed to expense that," he said.

This malleability, which Ryan Graves explains as a desire "to build a business that serves millions of people, not be slaves to a brand," makes sense given how idiosyncratic transportation can be. Each city's taxicabs have their own color scheme—yellow in New York, but beige in Berlin—pricing structure, and set of cultural norms. For years, Muscovites have used a modified hitchhiking system in lieu of cabs and, weirdly enough, so have some residents of the ritzier parts of Oakland and Berkeley.

That's why each Uber market effectively operates as its own startup. "Travis really wanted people who embedded in the fabric of the city," says Rachel Holt, who served as Uber's general manager of Washington, D.C. (and is now responsible for operations for the East Coast). Holt, who had been a product manager at Clorox (she oversaw the company's Hidden Valley vinaigrettes), was given an annual revenue goal—$7 million—in her offer letter and *(Continued on page 141)*



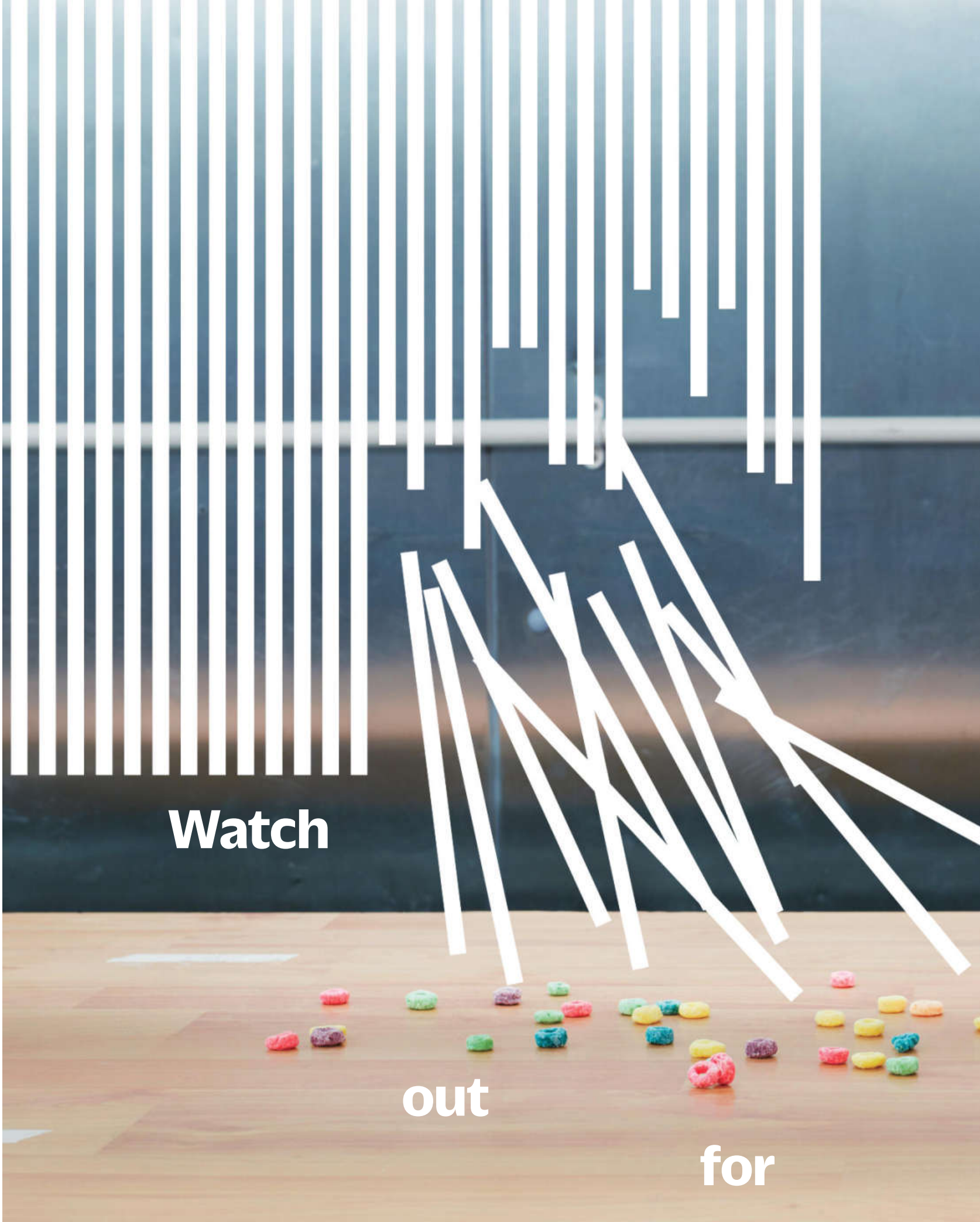
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Fast Company **received an unprecedented tour of Dyson's R&D facilities. Here, the V6 Absolute, attached to a robotic arm capable of swinging a vacuum back and forth for days on end, is tested for stress points and suction volume.**

Can the pioneering vacuum maker transform itself into a full-blown tech company? An exclusive peek inside the house that suction built.

By Matthew Shaer
Photographs by Kate Peters



Sir James Dyson, inventor and honorary Commander of the Order of the British Empire, works out of a glass-walled office on the second floor of Dyson world headquarters, in the village of Malmesbury, 100 miles west of London. The space is airy and bright, and filled, museum-style, with tokens of Dyson's design influences: a book on the history of the Toyota corporation, an old but durable plastic Sony flip phone, a toy 1961 Mini Cooper, a die-cast model of a 1970s-era Hawker Siddeley Harrier warplane. "The Harrier was a revolutionary machine," Dyson tells me. "It could take off and land vertically, and it had a one-piece carbon fiber wing that made it very, very light. It wasn't the fastest battle plane out there, but it was the one all the RAF pilots wanted to use, because its extreme lightness made it so maneuverable. And, of course," he emphasizes, "it was a British invention." A few years ago, Dyson located a real-life decommissioned Harrier jet on the Internet and paid to have it hauled from an airfield in nearby Essex to Malmesbury. It now sits at the main entrance to Dyson HQ, directly beneath the founder's office windows.

At 6-foot-1, Dyson is all angles—jutting jaw, slender fingers, pronounced cheekbones. In commercials, and in the photographs that appear on the boxes of Dyson vacuum cleaners, he typically eschews glasses, but around the office, he favors a round pair that give him an owlish look and amplify the intensity of his blue eyes. On the June day we meet, he is wearing a steel-strap Suunto Ventus watch, along with a button-down shirt and drawstring pants designed by his daughter, Emily, who owns a popular boutique in London. He apologizes for running late: He'd spent the afternoon downstairs in the R&D lab, inspecting prototypes. "It was difficult to break away," he says. "I can't man the lathe anymore, but I can be down there every day, going from project to project."

Dyson is 68. His air-circulation-product enterprise, which did a company-record $2.1 billion in global sales last year, has given



him a net worth currently estimated to be just shy of $5 billion. Not surprisingly, he is frequently asked if he will ever take the business public. He always demurs. "I've always thought it depended on what kind of company you wanted to be, whether or not you bring in other shareholders," Dyson says. "Our interest is in technology and engineering and design, and as a family business, we are able to keep the focus and philosophy there. We're able to think very long-term, to develop technology that might be 20 to 25 years away. We can afford to do it. We can afford to make mistakes without anyone being sacked. We can take a long-term view of everything."

He gestures to the products lining the walls of the room, a highlight reel from Dyson's 22-year corporate history that seems to prove his point nicely: The DC01, the first Dyson vacuum cleaner built for the U.K. market, and a national best seller. The DC07, with its Lamborghini-yellow paint job and translucent bin. The digital-motor-powered V6 Absolute, a cordless wonder that retails for a cool

"We're both very passionate about technology," Dyson (right) says of son Jake. "We love making things and designing them, engineering them."



A chamber in the R&D area tests for radio interference between products; the antennae can pick up various frequencies.

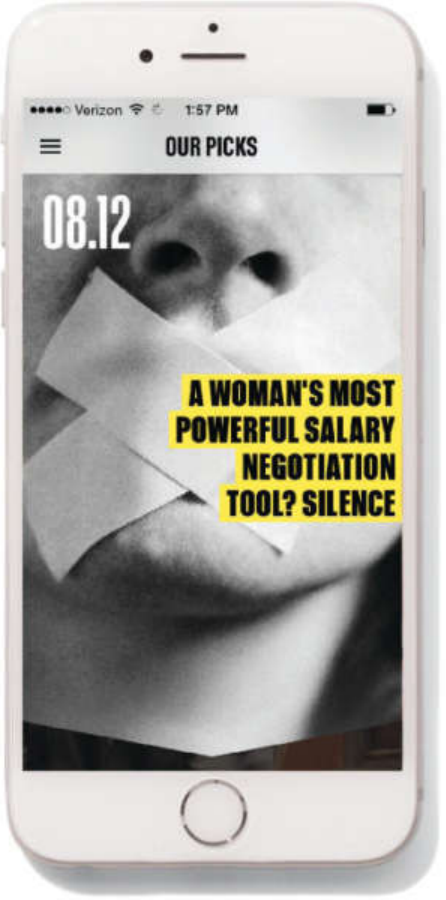
500 bucks. The Airblade hand dryer. The circular Air Multiplier—essentially a fan without blades—and its elliptical, climate-controlling cousin, the Hot + Cool. With this kind of success, Dyson acknowledges, there is always the temptation to "rest on your laurels, to slap your name on more products, to think purely in terms of business decisions. But," he smiles, "that's not where I'm headed."

Instead, Dyson is aiming for a bold and potentially risky expansion of his brand, which some employees have taken to calling "Dyson 2.0." Last year, the company broke ground on a more than $400 million technology campus adjacent to the Malmesbury headquarters. When it is completed next year, it will house 3,000 designers and engineers. Already, the company has brought in hundreds of software and computer hardware specialists and tripled the size of its engineering staff. The company currently funnels $2.5 million into R&D every week; it has spent $8 million on a cutting-edge robotics research lab at Imperial College, in London, and put another $15 million in the American-based solid-state battery company Sakti3.

In coming months, the technology campus will serve as a launching pad for a range of new verticals, some of which Dyson has disclosed (robotics), some of which seem imminent (the Sakti3 investment appears to indicate a further interest in household electronics), and some of which are entirely classified. Meanwhile, a few months before I arrived in Malmesbury, Dyson announced it was acquiring the LED lighting company

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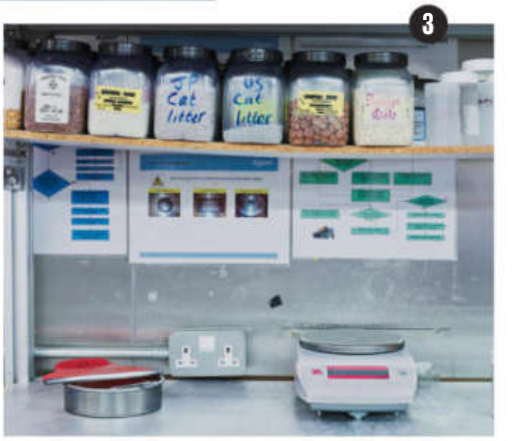
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1. A desk in James Dyson's office displays some of his design inspirations: model cars, electric motors from various Dyson products, and one of the first fans the company made.

2. Dyson's new autonomous vacuum cleaner, the 360 Eye (aka the Robot)

3. Household debris (kitty litter, sand, rice) awaits its vacuum-cleaner foes.

4. Computers in the rapid-prototyping room are able to turn a wild idea into a tactile object in a matter of hours.

5. The front entrance to Dyson's headquarters features a decommissioned Harrier jet, known for its lightness and maneuverability.

founded by James's eldest son, Jake, and bringing Jake on board as a senior executive. (Jake and his younger brother, Sam, the owner of a record label, Distiller, both have seats on the board of directors.) Jake's lights will be sold under the Dyson name; all manufacturing will be transferred to the Southeast Asian facilities used by Dyson proper, and Dyson will gain market share in yet another industry.

If Dyson has no interest in an IPO, does Jake's new role at the company signal that he might at least be looking to step back a bit? Dyson swears to me that he has zero interest in retiring; the very word sent him jolting forward in his leather chair. "No," he says. "No, no, no."

Still, it's impossible not to see all of the changes underfoot at Malmesbury—the new campus, the new products, the newly empowered son—as an effort to look forward to the next act in Dyson's evolution as a brand, one that will be defined, at least in part, by a fresh influx of talent and ideas. If it succeeds, Dyson might no longer be known as a cutting-edge appliance company, but as a cutting-edge technology company, full stop.

Steve Wozniak and Steve Jobs had the Apple I. Bill Gates had BASIC. James Dyson had a worn-out Hoover Junior vacuum cleaner that he jury-rigged with a cardboard cone—a scaled-down version of a device he'd once observed, as a budding inventor, at a nearby sawmill. The mill's "cyclone" used centrifugal force to spin dust out of the air. Dyson's prototype vacuum did the same with household debris. In 1983, a Japanese company agreed to sell the machine, which had a transparent bin, for a list price of close to $2,000. It was a success. The first vacuum Dyson built after starting his own company, in 1993, also featured a transparent bin. "We did market research and discovered that nobody wanted to see the dirt," Dyson says. "But as engineers, we couldn't understand that. We loved seeing what went on inside—how much the machine picked up every time you ran it. So we ignored the research."

He still hasn't given it another glance. Dyson, which owns 20% to 30% of the vacuum

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market in Europe (depending on which white paper you consult) and 6% in the U.S. (according to Euromonitor), has long touted the superior suction power of its vacuum cleaners, but much of the continuing popularity of the brand has to do with Dyson's functional transparency. The products, and the prices they command, confer a status on the owner in the same way a MacBook Pro does: Here is a person who is willing to invest in style and quality. Indeed, in England, Dyson employees are accustomed to having their company compared to Apple under Steve Jobs. But the analogy can chafe. A few Dyson staffers I spoke to pointed out that Apple often puts the emphasis on design for design's sake, intentionally shrouding the workings of its computers—anathema to Dyson ideology.

A few hours after I meet with Dyson in his office, I stand with engineer Mike Aldred at the edge of a small model living room the company uses to show off new technology. He places Dyson's latest product, an autonomous vacuum cleaner known as the 360 Eye—referred to around Malmesbury simply as "the Robot"—on the carpet. The vacuum, which has been in the climbs up a short ledge and weaves between a pair of table legs. Faced with the edge of an armchair, it stops and seems to fall into deep thought. "It's incredibly light, and all the weight is on the chassis," Aldred says, speaking as a father would of his star athlete son. "So as it comes to something, it will just gently nudge it, detect that it's hit something, and go, 'Oh, okay! Time to back off and move away.' "

Aldred says that Dyson could have released the machine earlier but kept waiting: The batteries weren't lasting long enough, the sensors were too finicky, the camera had blind spots. "There are moments, obviously, when you'd love to see your product out there," Aldred says. "But I'd hate to have it out there knowing it could be better. And I'm lucky, having someone like James, who is prepared to let us spend all this time getting it exactly right."

He points to his iPhone, which displays a map of the area the vacuum covered. "Now what's nice," he goes on, "is let's say you've gone out for the day and programmed it to clean the whole ground floor, but you forgot to leave a door open. It will remember what remains to

"We'll only get into a field if we believe we can transform it—if we have the technology to really make a difference," says James Dyson.

works for more than 15 years and will go on sale in Japan in December, and in Europe and the U.S. early next year, is identifiably a Dyson creation, with a digital motor and familiar cyclone cones visible inside a see-through bin. At the same time, the device is clearly a major leap forward for Dyson into computer programming, software design, the Internet of Things. "It was a very, very steep learning curve," Aldred says. "When we first started out on the robot, we had great motor teams but not a lot of electronics expertise."

For help, he turned to a dozen hardware specialists and software developers poached from British tech firms who improved the 360 Eye's computer systems and created a new Android and iOS app. "We've polished this thing until it's exactly right," Aldred says. He digs his iPhone out of his pocket and swipes a finger across the screen. The Robot hums to life, and working its way outward from the center of the room, be cleaned, and when you get back home, you can put it back down in that uncleaned area, and away it'll go."

In the 15 years Dyson spent painstakingly perfecting the 360 Eye, a range of autonomous floor cleaners have entered the market, including iRobot's Roomba and several models from Samsung. Dyson says that the 360 Eye will offer better suction, more advanced sensors, and longer-lasting battery life than its competitors. Still, in a sense, the device is illustrative of the challenges Dyson faces as it attempts to expand into categories already thick with deep-pocketed rivals: What happens when a company accustomed to being hailed for its innovations decides to play catch-up?

More than 2,000 people work at the Dyson complex in Malmesbury, many of them fresh-faced and hoodie-clad. (Walking the serpentine halls of the main building, you'd be forgiven for thinking you'd arrived at the home base of a Silicon Valley software developer.) But only a small fraction are allowed to step foot in the research and development area, which lies behind a set of frosted glass doors—and a fingerprint scanner—on the ground floor.

Visitors are rare here, and journalists unheard of. In order to gain access, I had to surrender my voice recorder, place my iPhone in a sealed plastic bag, and don a bright blue-and-yellow vest, so employees would be able to see me coming and have adequate time to drop a tarp over anything off-limits. "We're extremely careful about security," Alex Knox, the global new development director, says by way of apology. (Not that it's always paid off: In 2012, Dyson said it caught a former employee selling confidential documents to a rival.)

The birthplace of most of the company's major innovations, the R&D area is where the next 10 years of Dyson devices are being crafted. "We're on a design-build-test loop," explains Knox. Over the course of an average week, the company's top-secret New Product Innovation team comes up with a dozen prototypes, which are modeled and shown off to other engineers. The most promising, no matter how seemingly far-fetched, are sent up the food chain to the top execs, often to James Dyson himself.

Knox, the third engineer recruited by Dyson in the 1990s—his first gig was working on the design of the original DC01—helps to oversee that process. "Way back in the day, the prototypes would be cardboard, or they'd be built by in-house model makers," he says, pushing open the door to a room dominated by a large steel crate. "Now we've gotten a little more advanced." The crate, Knox explains, is an EOSINT P 760, an $800,000 device that uses lasers to sinter prototypes out of metal powder. An engineer could work up his prototype with CAD software on one of the computers down the hall, he says, and have it in hand by the end of the day.

Our next stop is the EMC chamber, a room used to test prototypes for electronic or radio interference with other devices. The 20-foot walls are covered in large slabs of foam that absorb extraneous sound; there is no testing going on at the moment, and the quiet is unearthly. The room next door is bristling with microphones that measure the sonic output of Dyson products. "We want to make sure there are no unpleasant sounds," Knox says, "because the sound a device makes can be as important as the way it looks, or the way it performs."

Dyson is fond of saying that it overtests its devices, far beyond the parameters stipulated by U.S. or European regulating agencies. Before leaving the R&D *(Continued on page 142)*



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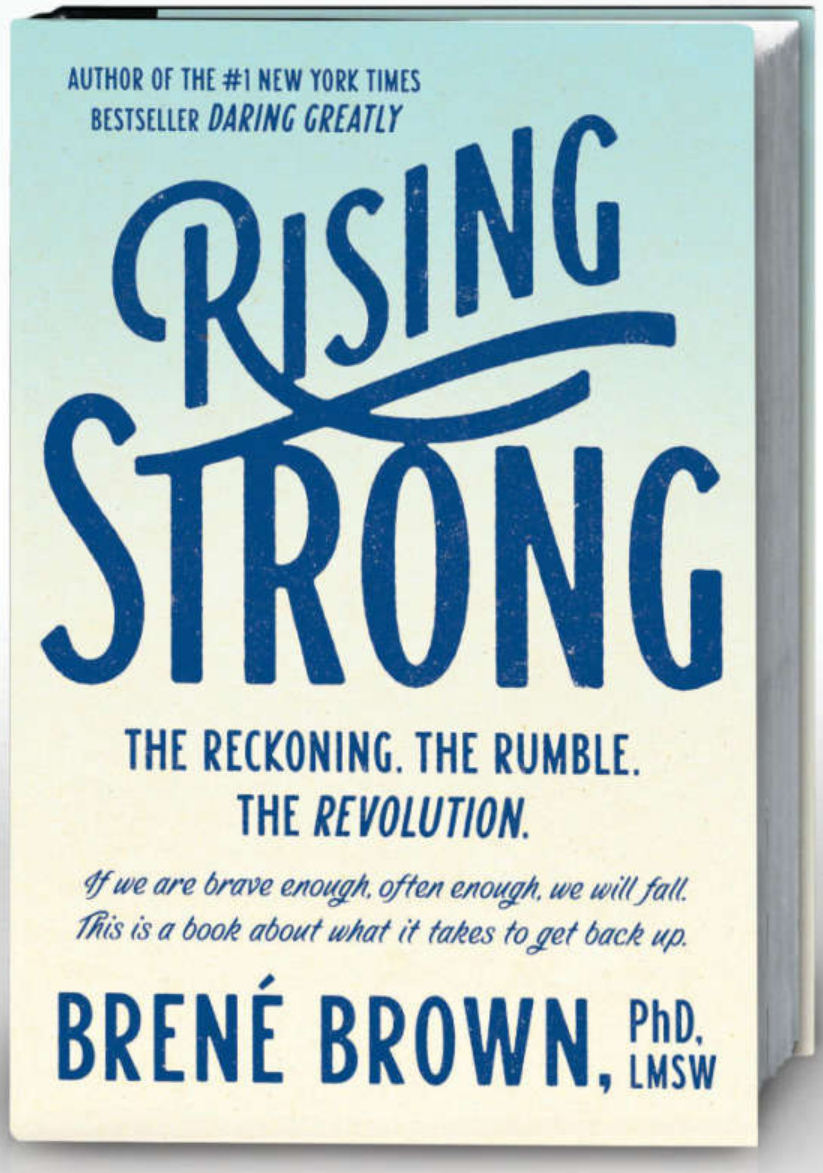
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Slack

(Continued from page 82)

reflects the fact that tech hubs are emerging all over the world—there's a feeling of young, smart wealth here, but also a Canadian restraint that's quite different from Silicon Valley flash.

Butterfield has never followed any obvious path to tech stardom, and that idiosyncratic journey is crucial to the Slack story. The software is a direct reflection of the unique personality that shaped it. Butterfield was born in the backwoods of Canada in 1973 to a hippie-ish mother and a draft-dodging father, who lived in a log cabin and named their baby boy Dharma Jeremy Butterfield. It wasn't until he was 12 that his parents, who by that time had made the psychic and literal move to the city of Victoria, British Columbia, and had successful careers in real estate, let him legally change it to Stewart.

When he was 7 years old, Butterfield got his first computer, and while he loved playing video games, he was hardly a traditional tech geek. In his studies he was drawn to philosophy, and at the U.K.'s Clare College, Cambridge, he wrote his thesis on "the difference between living things and nonliving things," he says. "And guess what? The answer is that living things are alive! It took me 30,000 words to get that across."

In the late 1990s, Butterfield moved to Vancouver, and in 2002 he and his then-wife, Caterina Fake, decided to launch a company to build their own MMO game, called *Game Neverending*. It was as quirky as its founders—and a financial flop. In 2004, Butterfield, Fake, and an employee decided to use the image-sharing technology that they'd created for the game to launch something they named Flickr. The pioneering photo-sharing website presaged much of what was to come in the world of social media, and was a fast success. They sold it to Yahoo in 2005, for around $25 million.

As part of the sale, Butterfield became a Yahoo employee—a three-year ordeal that proved instructive. "It was mind-blowing," Butterfield says. "I'd never worked in a big company. All the software was terrible. The payroll, time-tracking, benefits, intranet, even the 401(k) was designed in a weirdly bad way." Butterfield eventually quit to launch another game, called *Glitch*. It, too, went nowhere. But when they were developing the game, he and his crew of programmers had come up with a cool way to collaborate on their company's little network. Seeing the chance to create a work environment that was a million times better than what he had suffered through at Yahoo, Butterfield transformed that program into what would become Slack. The new company launched in December 2012, with a total staff of just eight people.

From the beginning, Butterfield designed Slack for end users like himself, rather than first considering the needs of corporations or the demands of IT managers, which is how most enterprise software is created. As a result, Slack—unlike predecessors such as HipChat and Yammer—is a triumph of humane thinking.

"We're really conscious of solving problems in a way that doesn't fetishize the purity of UI design at the expense of the user," says Slack's design director, Brandon Velestuk, who has worked closely with Butterfield since joining Slack in 2014. "There was always an understanding that this was a tool people were going to spend their entire day in, so we sought to bring an empathy to the design."

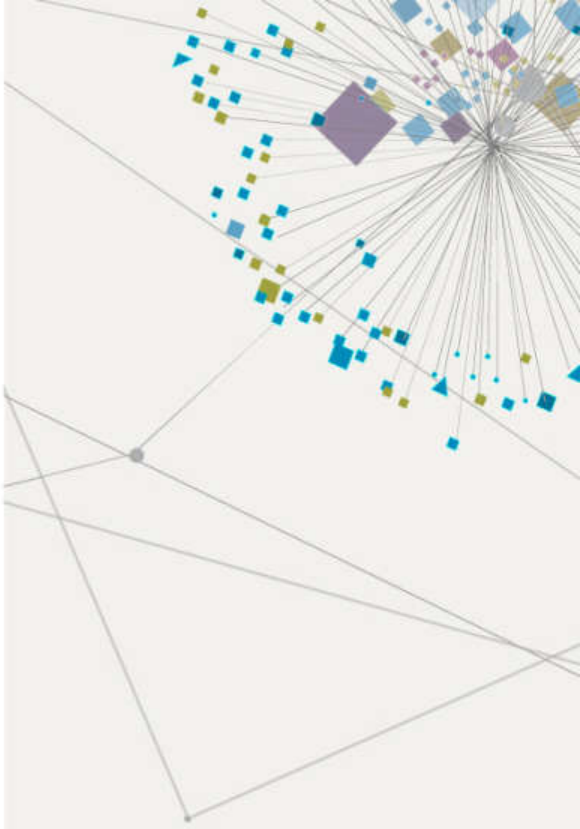
Slack's in-app communications are intended to reinforce the idea it's designed for you, a regular human being, by other normal people. When you log in for the first time, a dialog box pops up to say, "Hello. Thank you for signing up for Slack. We're really happy to have you!" In the morning, you might be greeted with cute little phrases such as, "Please enjoy Slack responsibly."

"Slack's tone might not be a benefit for every kind of company," Butterfield acknowledges. "But even people who work in the most boring parts of the most boring accounting firms are still human beings. Some of them still go home and smoke weed, for example—not that smoking weed is the hallmark of humanity."

It's a voice that sounds, not coincidentally, a lot like Butterfield's. "I used to respond to every tweet myself," he says. "That tone was established by, oh, 15,000 tweets. There's a very particular place we want to be in people's minds: not too boring and stodgy, but never slapstick. We want it to be relatable—genuine, respectful. One of my favorite tweets—something we'll do every once in a while—is, 'Absolutely!' with the exclamation mark." He laughs, but there's a hint of pride not far from the surface. "I consider that my masterpiece."

That approach helps explain why at many companies Slack has been introduced not by IT

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Slack

(Continued from page 137)

managers, but by regular employees who have heard about the software from friends or have used it elsewhere. Slack came to Zappos, for instance, via a developer who started using it with his team. Seeing how much they enjoyed the experience, collaboration product manager David Fong started rolling it out to anyone who wanted it. So far, about two-thirds of Zappos's 1,400 employees have elected to get Slack on their computers. "It feels right to so many people," Fong says. "Zappos is very focused on culture, and Slack is a fun user experience. It's like, if you go to work in a drab, colorless building, work can feel sterile. Slack isn't sterile."

As the waiter at Vij's wraps up our leftover lamb popsicles and vegetable koftes for Butterfield to take home, Slack's CEO is laying out his ambitious plans for his company's future. "Replacing [Microsoft's] Exchange Server as the essential hub where all the information flows, I think that's something we'll do very well," he says. "We can be the bottom layer of the technology stack, and make everything else better." Thanks to adoring word-of-mouth and increased media attention, Slack's public profile grows every day. Revenues—some companies pay fees of up to $15 per user per month, depending on the level of security and services—are closing in on expenses, and should accelerate after Slack introduces a more robust and expensive "Enterprise" version later this year.

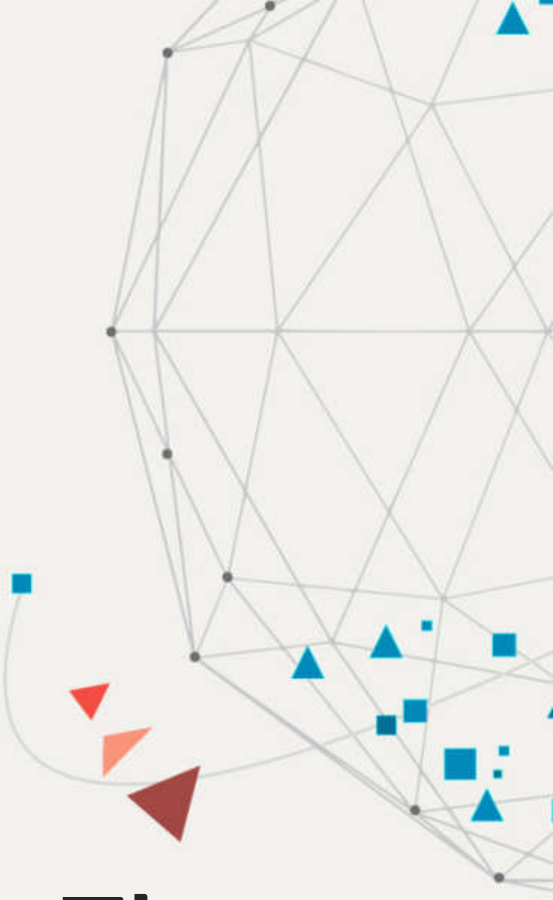
> "M&A GENERALLY DOESN'T WORK," SAYS BUTTERFIELD. "THE SPECIAL CULTURE IS CRUSHED, THE PACE OF INNOVATION IS SLOWED."

In order to deliver on Slack's potential—and justify that high valuation—Butterfield and Co. must now convince corporate America that it is truly an indispensable product. The first step is to merge Slack with every other crucial piece of software on a corporate network. Slack is in the process of creating integrations for a slew of products from a wide range of third-party vendors. Twitter, Box, Dropbox, Stripe, and Google products such as Drive and Calendar are already integrated, along with dozens of other apps. One particular workplace favorite is Giphy, which lets users post random GIFs into conversations (try to find that in your Outlook). According to Butterfield, more than 400 companies are waiting for Slack to integrate their applications.

Still, Slack has to clear some major hurdles before it can become a truly significant player, and getting old-line companies on board is going to be challenging. The company's early customer base has primarily been startups and media companies, which tend to have simpler structures and, crucially, less-stringent security standards—a huge area of concern for enterprises of serious scale. While Zappos's Fong loves Slack, he won't allow it to be used for anything that's customer-related or financial. That wariness was reflected by other IT managers I spoke with, most of whom rely on Microsoft products. "I like Slack's ease of use; I like the file sharing and the searchability," says the head of technology at one New York investment group. "But in its current format, Slack is unlikely to find traction in a firm like ours. As things stand, my impression is of a fuzzy, feel-good millennial hipster tool rather than a buttoned-down, conservative, and justifiable platform." While he's open to reexamining Slack in the future, he's skeptical. "No one ever got fired from an IT department for buying from Redmond," he says. Ask Microsoft about Butterfield's ambitions and the response is diplomatic but dubious. "When you have 1 million, 2 million [overall] users, there's one set of requirements," says Julia White, GM of product marketing for Office at Microsoft. "But then when you go big, there's a whole new set of requirements." According to White, one out of every seven people on the planet uses Office.

Garnering tens of millions of corporate users as an independent company could be hard for this and many other reasons. But Slack might be an attractive takeover target or strategic partner for a bigger company. Butterfield swears he isn't interested in selling. "M&A generally doesn't work," he says, alluding to his experience with Flickr, which, since the Yahoo acquisition, has been overshadowed by newer photo services like Instagram. "The special culture is crushed, the pace of innovation is slowed." He also admits that this is exactly what he'd say if he was, in fact, trying to sell the company.

Whatever happens to Slack, there's a decent chance that Butterfield and Velestuk will be remembered as the guys who finally vanquished email, which, after 20 years, is starting to feel as stale as pneumatic tubes once did. "I could talk to my kids about it and say, 'Well, there was this thing called email back in the day. I used it quite a lot . . . ,'" says Velestuk. "That would be pretty nice."



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Uber

(Continued from page 124)

told to do whatever she saw fit to attract drivers and riders in Washington. She cold-called limo companies, arranged to hand out $10 Uber credits at corporate holiday parties, and organized a series of marketing stunts, including a Presidents Day "Ubercade" in which a handful of lucky riders were surprised with three-car motorcades, complete with actors in Secret Service garb. She hit her revenue goal within six months. "For the most part, we were left alone," she says.

Kalanick tends to micromanage certain parts of the business—pricing, for instance, as well as recruiting—but the company's local general managers, who tend to be hustlers hired in his own image, are given wide latitude in figuring out how best to attract drivers and riders to the service. "I don't make decisions unless I'm all the way in the details," says Kalanick.

He expects everyone else to follow that example. Local staff members are allowed access to almost all of the company's data, meaning that a marketing manager in Jakarta can instantaneously call up the overnight revenue for Town Cars in London or look at what happened in Chicago when the company gave out free ice cream. "I always tell new GMs that you're an entrepreneur, but you have 300 A/B tests going on in cities around the world," Holt says. "You have the ability to say, 'Hey we figured something out that made this a little bit better, let's spread it.'"

Of course, there have also been negative repercussions to this hands-off approach. In Lyon, France, a local general manager launched an Ubercade-like promotion in October 2014, but one with a misogynistic bent. "Who said women don't know how to drive?" an Uber Lyon blog post teased (it was canceled immediately). The following month, at an ostensibly off-the-record dinner with media power brokers, an Uber business-development lead suggested that Uber should fight back against bad press by investigating the personal lives of those who criticized the company. The news went viral almost immediately.

Kalanick was not the mastermind behind these blunders, but he had set the tone that produced them, including referring to his company as "Boob-er" in *GQ* magazine for its success in improving his luck with women, and his public declaration that Uber planned to "throw mud" at its critics.

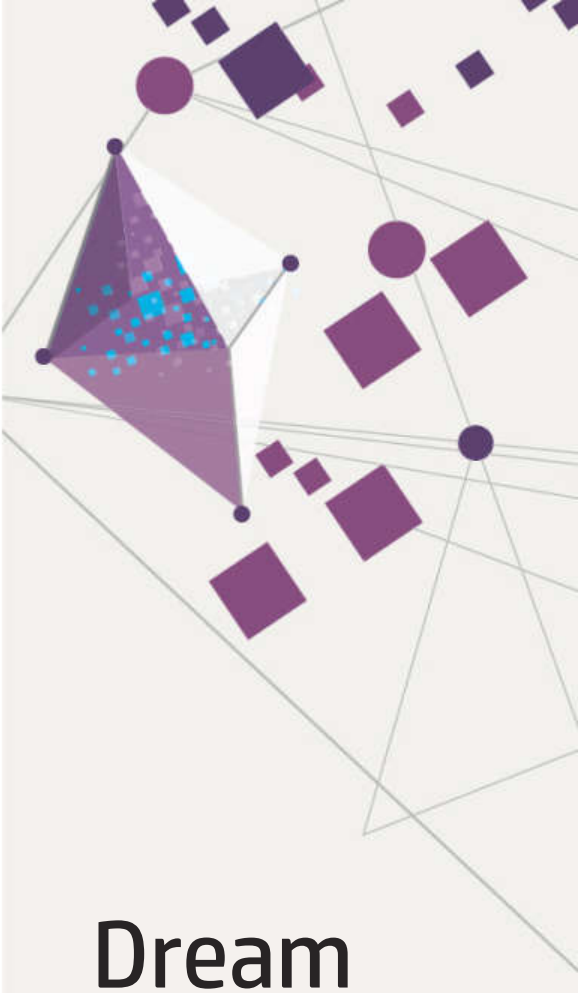
The gaffes have been described by some as evidence of a morally rotten company, but they're more a symptom of Uber's wild growth. The company more than quadrupled the number of cities it served in 2014, and thoroughly eclipsed Lyft. (According to a September 2014 report, Uber was generating 12 times more revenue than its erstwhile peer.) Kalanick may be a data obsessive, but there's no metric to reveal precisely when you've won. His perception of himself and of Uber had not caught up with reality: He was no longer the young gun in a cowboy hat trying to make it happen; he and Uber were big-time. "Travis's views were shaped by getting his ass kicked over and over again," says Lukas Biewald, whose company, Crowd Flower, was born in Kalanick's Jam Pad. "He didn't realize he wasn't an underdog anymore."

To Kalanick's allies, the dinner, and Kalanick's subsequent apology (via a tweetstorm), represents a turning point. It was the first time Uber had taken a punch without throwing one in return. "Bill Gates and Mark Zuckerberg went through something similar," says Uber board member Bill Gurley. "They were the young entrepreneurs who were allowed to kind of say anything, and do anything, and then all of a sudden their companies had this kind of influence on the world. That responsibility gets thrown at you quickly." David Plouffe, the former Obama consigliere who now serves Kalanick in a similar role as Uber's chief strategist, compares Kalanick's response to the 2008 Obama campaign's rebound after losing the New Hampshire primary to Hillary Clinton. "It seemed like the most devastating thing imaginable, but we ended up being stronger for it," Plouffe says. "Everyone understood that we are a really big, interesting company under the spotlight."

The first public unveiling of this Plouffe-ified Travis Kalanick—who now, Boob-er days behind him, lives with his girlfriend, the violinist Gabi Holzwarth, and their goldendoodle, Yobu—was at the company's five-year anniversary celebration this past June. The event was stage-managed like, well, an Obama campaign rally: A series of close supporters warmed up the crowd; a cast of camera-ready Uber drivers had been invited to be on hand, including a military spouse who introduced Kalanick; there were balloons. It was all impeccable, but for Kalanick's inability to replicate the president's soaring rhetoric. He read from a teleprompter, sometimes stumbling over words, and he kept a tight hold on the lectern. "I realize that I can come off as a somewhat fierce advocate for Uber," Kalanick said. "I also realize that some have used a different *A*-word to describe me." He barely mentioned the taxi industry at all in his speech, choosing instead to frame Uber in a grander narrative. "Uber isn't just the better choice for drivers and riders and commuters, it's the right choice for cities, and all the people who live there." The speech was good; the speaker looked miserable.

"It's not my natural state of affairs to have a scripted thing," Kalanick tells me. "When you're a startup guy, you have to be really lean and scrappy. But as you get perceived to be big, you can't have that same kind of scrappiness."

His word choice—*perceived*—makes me wonder if Kalanick sees Uber as a big company or not. "Are you an underdog?" I ask.



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Uber

(Continued from page 141)

Kalanick hesitates, as if he knows that the answer is no, but he wants it to be yes. "I mean, we're an underdog in China, right?" he says. "The thing is, how do you build a company where you'd still feel small, even as you get bigger?"

Kalanick's answer to these questions is a series of audacious initiatives, including a major push into China and other new markets and investments in Uber's core offering that could eventually move it even further away from its roots in limousines and luxury. Over the past year, he has been throwing money into UberPool, a new service that pairs up riders on the same route and charges them a reduced price. I found the experience of buddying up with a total stranger a little weird the first few times, but in San Francisco the offering now accounts for 50% of trips, thanks to big discounts for riders who pay $7 or less to go anywhere in the city center regardless of how much the trip actually ends up costing Uber.

Kalanick made UberPool the centerpiece of his five-year anniversary speech, teasing a future of the "perpetual ride," when drivers always have at least one passenger in their car. "Two people taking a similar route are now taking one car instead of two," he said. "Not only is it much less expensive than taking a cab or owning a car, it has the potential to be as affordable as taking a subway, or a bus, or other means of transportation. And that's what we believe is the real game changer." Kalanick tells me that Uber might one day expand UberPool to include buses, which he calls "the ultimate carpool machine."

What's perhaps most surprising about UberPool is how quickly the initiative took shape. Pham, Uber's CTO, tells me that the company launched the service in just two weeks. Uber is now expanding carpools to New York, Paris, Los Angeles, and Boston, again offering big subsidies to entice riders to try it out. It's been slow-going and expensive, Kalanick admits, but he's willing to invest money to push his big idea in cities where the communitarian spirit doesn't come as easily as in San Francisco. "You have to induce people to do it at the beginning," he says.

That's just the start of the company's efforts to reinvent public transportation. Earlier this year, Uber poached dozens of members of the Carnegie Mellon University robotics department for a driverless-car initiative that could one day make its services much cheaper and more efficient. In the near term though, the move represented a significant expense. Uber reportedly doubled researchers' salaries and offered six-figure bonuses to the defectors. It also antagonized some drivers, whom Kalanick has gone to great lengths to court with promises of flexible, dependable work. "We need to make sure that we are a part of the future," says Kalanick of autonomous cars. "You can't call yourself a technology company if you're resisting technological progress."

A few months later, Kalanick again found an opportunity to play the insurgent when he announced that Uber would be expanding its efforts in China, a market currently dominated by Didi Kuaidi—a merger between the two largest local players and backed by the Asian tech giants Alibaba, Tencent, and Softbank. As of this summer, Uber has cars on the road in 15 Chinese cities with plans to be in 50 next year. The results so far have been astonishing: In just nine months, three Chinese cities (Chengdu, Guangzhou, and Hangzhou) have each already accounted for more rides than New York.

In a letter leaked to the *Financial Times* in June that detailed Uber's growth in China, Kalanick told investors that he was "personally overseeing" Uber's local expansion in the country and identified himself as "CEO, UberChina." And then, just a month after that, Kalanick announced that Uber would invest $1 billion to grow its business in India.

These moves are risky, and Kalanick's persistent impulse to bet big has been expensive. Uber has raised more than $8 billion to date. It'll need more, most likely, as recently leaked financing documents show that it is losing more than a dollar for every dollar it takes in. Uber claims to be profitable in dozens of markets, and it could close this shortfall if Kalanick were willing to focus on generating profits in the company's most mature cities, but that's not how Uber's CEO rolls. Bill Gurley compares Kalanick to Jeff Bezos, and it seems likely that Uber will follow a path similar to Amazon, relentlessly pushing to keep prices low while expanding—at the cost of short-term profits.

All of this probably should scare Kalanick. Instead he seems to welcome it, telling me that he sometimes fantasizes about relocating to China. "That's where the action is," he says. "There are certain things in life where you have to go for it—just for the sheer adventure of it, and also for the potential," he says, his eyes widening. "Part of being an entrepreneur is going to places that go against what the conventional wisdom might say. And when you win, well, you've won, right?"

At Granada Hills High School, in another Valley and another time, the teenage Kalanick specialized in the long jump and the quarter-mile. He was never the fastest guy on the team, but he was the perfect kid to run the anchor leg on the school's 4-by-400-meter relay, because he ran best when he ran from behind. "I would put it all in," he tells me. "Leave it all on the field." A photo from his senior yearbook, the only one of Kalanick besides his class portrait, shows him lunging forward, his front leg kicked out far ahead of his slender body, his face contorted in a striving grimace.

He has always been this way. Now Kalanick must learn how to run from the front.

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Dyson

(Continued from page 134)

area, Knox leads me into a small trailer where a late-model vacuum cleaner is being run, by a robotic arm, back and forth across a stretch of carpet. This will continue for 50 hours or more, Knox says. Nearby, on the wall, are canisters of debris: One is marked SAND, and another, KITTY LITTER.

"It's not just kitty litter," Knox grins, turning the canister toward me. "See? It's marked *Japanese* kitty litter. We like to make sure we cater to all different kinds of markets." (There was an American/European kitty litter sample, too, he assures me.)

All this testing serves a purpose, Knox continues. Only through almost endless repetition can you truly discover what doesn't work, and what does. "We've found it can be really serendipitous," he says, and gives an example: Heavy-duty testing on the first cyclone vacuum cleaners led engineers to realize that a by-product of the suction was a so-called coandra effect—air could be directed to spit out as quickly as it had come in. The Airblade hand dryer followed, which led to the Air Multiplier.

"There are different ways inventions come about," says product innovation head Stephen Courtney, who devised the first Dyson Ball vacuum cleaner to address maneuverability issues on previous machines. "It's not always just thinking of an idea. When you're testing things, if you're observing everything properly and if the engineers themselves are doing the tests, you can make these incredible leaps."

Dyson will unveil the result of one such breakthrough "in the near future," the company says. During my time in Malmesbury, I am given a preview of the device—actually the precursor to an entire new line of products—under the condition that I not reveal any details about it. Suffice to say that the product represents both a radical departure from and a logical extension of the Dyson brand.

Dyson himself gives me a demo in his office, removing the machine from a metal box that looks as if it could withstand a tank shell. He turns it to and fro, marveling at its shapely lines. He is proud of it, clearly, and simultaneously wowed by it. This particular amalgamation of motor and metal, he believes, could be a major part of the future of his company.

Once this device launches, I ask, are there any other markets he is eager to get into? He answers indirectly. "I think the better way to think of it is that we'll only get into a field if we believe we can transform it—if we have the technology to really make a difference. This isn't a commercially driven venture," he says of the company. "It's not about just making good business decisions. It's about much more than that."

It's about finding perfection.

Jake Dyson's lighting business is situated in an old elevator factory in Clerkenwell, London's design district. The floors are rough wood, the walls gallery white. A sliding garage door opens up into the main room, and Jake will often drive his bright red Fiat 500 directly inside and park it next to his desk. Downstairs, in the basement, worktables are stained with grease and strewn with wrenches and spare bulbs.

On the day I visit, staffers are busy testing a new overhead light, code-named Ariel, which Dyson will release in late 2015. Ariel is rectangular and long, with the wide metal wings of a satellite; Dyson sees it primarily as a commercial product, for restaurants and hotels. "With most LED downlights they have to put diffuser over the top, and you get this glare," says lighting specialist Karoline Newman. "It can be unpleasant. Ours is much more concentrated and direct."

"And we can use it with baffle blades, which can crop the light to make it exactly fit your workplace," adds senior engineer Doug Inge, so that the light can drop off exactly where a table does, for instance. "You get this magical, targeted illumination." He flips off the house lights, leaving only the glow of the Ariel; the light is precise, clear, sharp.

Over the next few months, several of Jake's lighting engineers will join the core Dyson team in Malmesbury, but Jake plans to keep his creative team here in London. "We've formed very good relationships with local architects and lighting designers, and they come and see us regularly, and we get feedback," he says. "You have to be here for them to come out and have a coffee with you."

Jake, 42, has tousled ginger hair, blue eyes, and his father's quiet intensity. ("We're both very passionate about technology; we love making things and designing them, engineering them," James says of Jake. "We both believe in the same things, which is not quite true of my other two children.") Jake grew up in the Wiltshire countryside and studied industrial design at Central Saint Martins. "I enrolled with no one knowing who James Dyson was and left with him being tipped as the greatest British inventor/designer of his era," Jake recalls. "It was quite a transformation." But it was also somewhat of a burden. After five post-college years in Malmesbury, developing products with Dyson's New Product Innovation group, Jake left in 2004 to open his own business.

He found a work space in London and spent some time developing a new breed of ceiling fan—"it created two hurricanes in the room and oscillated around; quite lethal, actually," he says—before moving into lighting, a multibillion-dollar industry that seemed to Jake to be stuck in a bygone era. The products he found in showrooms were pricey, and their technology unevolved. Jake knew that he wanted to work with LED bulbs, which last much longer and consume much less energy than their incandescent counterparts. But he quickly encountered the same problem that had befuddled other engineers: LED bulbs are extremely hard to cool properly. "We looked at a lot of different options. Active cooling, with motors and pumped fluids and fans, is very effective, but you get a lot of noise. We wanted durability and lifetimes of 37 years, at 12 hours a day," Inge says. "We had a lot of customers say, 'Well, I'll be dead by then.' And we'd say, 'That's the point.' "

In 2011, Jake and his colleagues settled on a solution: a rectangular aluminum rod that sucked heat away from the LEDs. In proper Dyson fashion, the function of Dyson's first LED light, called the CSYS (short for coordinating system), dictates its form: it is stripped of embellishment, reduced to a sturdy, T-shaped alloy frame. Eight LEDs are mounted at the end of a boom inspired by a construction crane. A tap of the finger sends the boom shuttling from left to right; another tap adjusts the elevation. The device went on sale in Europe in 2012 for $699. By last year, Jake was supplying to 405 dealers in 27 countries (a U.S. version is due in late 2015). He and his team were still building every unit in shop, at a grueling pace.

For years, Jake had held off on returning to Malmesbury—he'd wanted to prove himself first. Now that he had, why not join forces with his father? Malmesbury could offer the R&D and manufacturing power he'd need to grow. More important, he could protect his father's vision. "I could never sit by and watch a corporate company come in and destroy it. And they would!" he exclaims, eyes widening. "They would just play on the brand, with no improvement in technology. They would destroy it."

In a way, Jake, who will spend the next year managing the lighting vertical while getting up to speed on the hundreds of products under way in Malmesbury, is the ideal ambassador for Dyson 2.0: an inventor steeped in traditional engineering, but raised in the electronic age. During our conversation, he stresses the importance of investing in software and computer hardware and devices that would fit into the Internet of Things. "The business may have to change a bit," he says. "All businesses do, to stay on top." He pauses and toys with the base of the CSYS light in front of him. "But I think it's important not to worry too much about the markets or upcoming trends. The key is to focus on Dyson's core strength"—building durable, innovative products. "You should take being afraid out of the equation," Jake says. "Is it possible? And am I excited about it? If the answer is yes, then you go for it."

Jake, James Dyson admits, "is going to be much more inventive and adventurous than me, probably. But the benefit to the way we've structured things is that the central philosophy will carry on. It's now a family business." And he's always played the long game.

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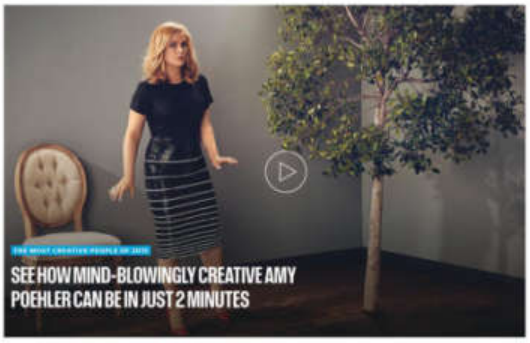
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BARATUNDE THURSTON



Fighting words

INFORMATION DOES NOT WANT TO BE FREE THE SAME WAY THAT I "WANT" DOUGHNUTS, SO LET'S STOP THINKING THAT IT DOES.

I recently got into a fight on the Internet. (Yes, I know, you're scandalized.) I was on a tech podcast discussing Google's decision to remove links to revenge porn from its search results when victims request it. Having found it nearly impossible, legally, to get the actual revenge porn sites taken down, these victims had sought redress via the search engines that could lead a potential employer or friend to the damaging material. If you can't make it disappear, you can at least make it more difficult to find.

I supported Google's decision to make life harder for the world's creeps, but my host considered it a slippery slope. "If you're going to say, 'I'm going to make a search engine,'" he said, "you should make one that indexes what's on the Net, regardless of content." He was concerned that "editorial intervention always introduces bias," choosing instead to put his faith in an algorithm that "can be completely objective."

My adversary was espousing what sociologist Tricia Wang, currently in residence at Ideo in Shanghai, calls information universalism. It means that we should not stomach any limitations on speech, because of what the First Amendment guarantees. Not only is this a misreading of the U.S. Constitution, but as our lives increasingly interact with the Internet, this attitude, while noble in theory, is more dangerous than ever.



Celine Grouard

Consider Reddit's near collapse last summer. Over the years, a belief set in that Reddit should support a community for any topic no matter how insidious, objectionable, dangerous, or stupid, because "information wants to be free," and any management whatsoever would be censorship and shove us over the edge of that slippery slope toward child-murdering Thought Police. True lovers of freedom—a tiny but loud cohort with too much time on their hands—should celebrate the dedication of private Internet resources to the shaming of fat people. To their minds, the inventive engineers at DARPA who created the Internet intended for the CoonTown subreddit to exist within this global network of networks.

"Techies confuse the open protocols of the Internet with a sense that information itself should remain open and unmanaged," Wang tells me. Indeed, the First Amendment has nothing to say about what Google Inc. and Reddit Inc. can and cannot do to create a service they consider useful. It is only concerned with actions of the government, specifically laws, to restrict speech. Information universalists are applying their feelings to the business decisions of companies and then expressing outrage when we are not, in fact, allowed to say whatever the hell we want—or at least not wherever the hell we want.

Google's job is not to reflect exactly what is on the Net; its job is to help us find relevant information (and deliver us unto advertisers). Technically speaking, Google captures between .04% and 4% of the Internet's content. Google is amazing and yet Google does nothing!

Similarly, Reddit was not founded to uphold the inalienable rights of terrible people to spread their terrors. Rather, it exists to spread memes and images and provide a forum of whatever kind its owners feel like providing.

The belief that human bias is only shown through banning forums or deleting search results—and not in the human-designed algorithm or site interface—is naive. There is no such pure state. Our prejudices are everywhere, our filtering systems unavoidable. Information management is a feature, not a bug, and those who argue otherwise are far more than information universalists. They are information extremists.

Baratunde Thurston is the cohost of the About Race *podcast and CEO and cofounder of Cultivated Wit, creators of Comedy Hack Day and other funny things.*

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